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HORTUS AGRENSIS

OR

CATALOGUE OF ALL PLANTS FOUND WILD OR CULTIVATED

IN THE

NEIGHBOURHOOD OF AGRA AND THE SURROUNDING COUNTRY.

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COMPILED BY

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Lieutenant H. M. 39th Regiment.

Fxh.24

AGRA:

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CATALOGUE

OF THE

PLANTS FOUND IN AND ABOUT AGRA.

This Catalogue was originally commenced as an useful paper for the Horticultural Society established at Agra. I afterwards made it more perfect with the view of having it published at Calcutta. When nearly finished, the Lieutenant Governor, the Hon'ble Mr. Thomason kindly told me that he would print it at the Government Press; I have therefore revised it and have spared no time or pains to make it as perfect as I am able. I have examined every plant in it personally, with the exception of the few I have marked as found by Dr. Royle and not by myself. From having carefully inspected every plant in its living state, I believe the names are all to be depended upon. This catalogue is arranged according to the method adopted by Decandolle as far as his Prodromus extends, and afterwards from the arrangement of my own Herbarium, (in the order I believe Decandolle intended to continue his Prodromus) according to the best system I could devise, taken by portions from various authors. A list of some kind, is much required at Agra; as the public gardens are very large and are a considerable expense to Government, and by proper management would afford capabilities for the cultivation of almost any plant from any of the four quarters of the Globe. The Rambagh is the best garden, and being close on the river side, is easily watered from the river water. There are several rare and valuable trees, and smaller plants to be found in this garden only. Secundra is a large well enclosed garden of 200 beegahs in extent with upwards of twenty wells, but only two are good, and many are choked up. The European Superintendent resides at Secundra, but I think that if any garden is to be discontinued, this should be the one. The Taj is also a very large garden and watered from the river, but not so easily as the Rambagh. There are some beautiful trees in the Taj and the soil appears very good. Several hundred plants might be introduced to the Taj garden with a perfect certainty of their thriving, as it is well sheltered and affords in various parts considerable diversities of temperature. All the Cacti, Stapeliæ, Pelargonia and Mesembryanthema would thrive well in the North Western Provinces. There are several very good private gardens in Agra, in one of which the best fruits are grown with great care and success. From this Catalogue the Superintendents of the Government Gardens at Calcutta and Seharunpoor might learn what plants it would be advisable to send to Agra, and surely the Taj garden deserves every attention and care, for no garden in the world contains such an interesting and beautiful building as the Tomb of Montaza and Shah Jehan. The months named indicate those during which the plant flowers at Agra, and I have also added the well known native names of some few garden plants and trees.

WILLIAM MUNRO.

THALAMIFLORÆ.

RANUNCULACEÆ.

Clematis Gouriana.—A few plants in the Rambagh. Have not yet flowered.

Ranunculus sceleratus, LINN. *R. indicus*, ROXB.—Very common weed on the banks of the Jumna—all the year.

Delphinium ajacis—Larkspur. Very fine in Agra in 1844 from American seed; comes into flower after all the other Larkspurs; seeds ripe in March.

D. pauciflorum—Larkspur. Very common in all gardens. Dec. to March.

Nigella sativa.—In gardens, rare. January to March.

MAGNOLIACEÆ.

Michelia champaca—Champa. Several large trees in the public gardens. April—May.

ANONACEÆ.

Anona squamosa—Custard Apple. Cultivated in gardens—Shreephul.

A. reticulata—Bullock heart. Cultivated.

Guatteria longifolia.—A very handsome tree in the public gardens. A very fine one grows close to the entrance to the Tomb at the Taj.

Artabotrys odoratissima—Velatti champa. Only one plant of this charming and curious creeper flowers in Agra, and that in the Rambagh, January to May. May be propagated by layers.

MENISPERMEÆ.

Cocculus villosus.—A weed not uncommon in stony places.

Cissampelos convolvulacea.—A weed common at Futtehpore Sikri.

NYMPHÆACEÆ.

Nymphæa rubra—Water Lily. This prettiest of flowers which is so abundant in Southern India is very rare in the neighbourhood of Agra. I only saw it once in a small natural lake in the hills about Dholpoor.

PAPAVERACEÆ.

Papaver dubium—Single Poppy. In one or two gardens—February.

P. somniferum—Opium Poppy. An agricultural crop; the double varieties are grown in gardens—February.

P. Rhœas—Double and single corn poppies. Very common in gardens. Jan.—March.

Argemone mexicana—Thistle Poppy. This plant which is generally indicative of sandy soils is, although an introduced plant, as abundant at Agra as it is over the whole of India, flowering throughout the year. At the foot of the Neilgherries I have seen it cultivated as an oil-producing plant. In Coorg it is highly prized for its juice, which becomes, on hardening, very similar to Gamboge, and is considered an invaluable remedy for sore eyes. In the jungles of Nagpoor the seeds are smoked to produce the narcotic effects of opium. In England it is esteemed as a garden flower.

Chryseis californica, LIND. formerly *Eschscholtzia*.—A very pretty flower opening in full sunshine. Is now very common at Agra. In 1843 there were only three plants.

C. crocea, LIND.—Scarcely perhaps different from the above. January to March.

FUMARIACEÆ.

Fumaria parviflora—Fumitory. A pretty weed abundant in corn fields. Dec. to March.

CRUCIFERÆ.

Alyssum maritimum—Sweet Alyssum. Flowers nearly all the year in gardens.

Iberis odorata—Sweet candy tuft. An annual recently introduced. Feb. to April.

Cheiranthus cheiri—Wall-flower. Very common in the cold weather.

Erysimum Perofskianum.—A very pretty sweet scented annual recently introduced from Cabool. Dec. to March.

Mathiola annua—Annual Stock.—Very common in gardens in the cold weather.

M. incana—Stock. Equally common; frequently double.

Malcomia maritima—Virginian Stock. A pretty annual—very common.

Sisymbrium Sophia—Flux weed. Rather pretty annual—introduced this year.

Arabis incanescens.—A weed introduced with wheat from the Sutledge. I observed it very common on the border of the desert near Ferozepore.

Nasturtium (nova species).—There is an undescribed species of Nasturtium pretty common in gardens near the river, always in flower.

Barbarea præcox—American cress. In a few gardens.

Tauscheria desertorum.—Royle mentions this plant as common in the neighbourhood of Agra, but I have not observed it.

Lepidium sativum—Common cress. Very common in gardens; one or two very superior varieties in the Hor: Soc: Gardens.

Brassica oleracea.—The Cabbage, Cauliflower and Knol Kohl are all as fine in Agra as in England, when well grown. The seed from Cabool produced extraordinarily fine cabbages in the Horticultural Society's Gardens.

B. rapa—Turnip. This thrives well in Agra and could be grown as a field crop.

Sinapis nigra—Black Mustard. An agricultural crop.

S. juncea—Frequently grown in gardens.

S. dichotoma.—Grown generally round the borders of fields

S. glauca.—Frequently cultivated mixed with wheat and barley.
Eruca sativa—Rocket. A small quantity grown in most gardens cultivated by natives.
Raphanus sativus—Radish. Grows very well in Agra and produces good seed.

CAPPARIDEÆ.

Capparis aphylla—Kurreel. Very common and very pretty in flower and in fruit. I never observed it further south than Dutteah.
Nieburhia oblongifolia.—A thorny shrub not uncommon in hedges near villages.
Gynandropsis pentaphylla.—A pretty weed common about Agra.
Polanisia icosandra.—In a very diminutive form on walls and the niches of stones.
P. Bhurtporensis.—A small but very pretty flower. Only observed in the plains of Roobass. September. A new species, see addenda for description.
Cratœva Roxburghii.—Two small trees are growing out of the pavement at Secundra. March.

FLACOURTIANEÆ.

Flacourtia cataphracta.—Very uncommon about Agra. In one or two gardens.

BIXINEÆ.

Bixa orellana Arnotto.—In the Resident's garden at Delhi according to Dr. Royle. I have never observed it at Agra, although so common in S. India.

RESEDACEÆ.

Reseda odorata—Mignionette. Flowers the greater part of the year.
R. Luteola.—Dyers' weed introduced this year to Agra. Thrives well, flowering in February and March.

VIOLACEÆ.

Viola patrinii—Scentless violet. Most luxuriant in the Rambagh. All months.
V. tricolor—Heartsease. In private gardens. Thriving very well. December to April.

POLYGALEÆ.

Polygala. Vahliana.—A pretty but inconspicuous weed. In hard dry soils.
P. arvensis.—A weed not uncommon in soil that has been some time uncultivated.

TAMARISCINEÆ.

Trichaurus cricoides.—A very pretty plant found in heavy sands near rivers, and especially near the Sutledge.
Tamarix Faras.—Farash. A very common tree in all directions around Agra, in places now far away from any human habitation, indicating, in squares, former gardens. This tree was attacked most ferociously by the locusts in 1843.
T. gallica.—This tree is rather rare about Agra.
T. dioica.—Mentioned by Royle. I have never observed it.

ELATINEÆ.

Elatine æstivosa.—A pretty pleasing plant which I have only observed on the steep banks of the Chumbul. December. I believe this is new to N. India.

E. (*Bergia*) *verticillata.*—Not an uncommon weed in marshy ground. December.

CARYOPHYLLACEÆ.

Dianthus caryophyllus.—One or two kinds of Picotee are very generally cultivated at Agra and with great success. December to May.

D. Barbatus—Sweet William. This also thrives very well at Agra. December to May.

D. chinensis—Indian pink. A favorite and very pretty annual. January to March.

Silene conoidea.—A pretty plant seen in gardens, uncultivated. Cold season.

S. canescens.—A pretty little annual flower in the cold season.

Gypsophila vaccaria.—A pretty weed in irrigated corn fields.

G. viscosa—D. C.—This is a very pleasing little plant, but certainly not a gypsophila. Introduced this year to Agra.

Stellaria media.—Rather a common weed in shady spots in gardens.

Arenaria media.—A very abundant weed in cultivated ground. Nov. to May.

Mollugo spergula.—A very common weed.

M. Pentaphylla.—Equally common.

MALVACEÆ.

Malva Mauritiana.—Mallow. A common, tall growing, cold weather.

M. sylvestris var:—A few plants in Secundra.

M. rotundifolia.—A small growing annual.

Althœa rosea.—Holly Hock. Cultivated in all gardens.

Hibiscus Rosa Sinensis—Shoe flower. There are several varieties of this pretty shrub in gardens at Agra.

H. Syriacus var: purpurascens var: albo plenus var: purpureo plenus.—This shrub which varies as single, double white, and double purple Hibiscus is one of the most showy plants in Agra and flowers in the rains.

H. vesicarius.—A pretty small plant, abundant in the plains of Roobass.

H. mutabilis.—Changeable Rose. A shrub, single and double, in large gardens.

H. hirtus.—A pretty small shrub in large gardens.

H. cannabinus.—An agricultural plant.

H. Sabdariffa.—Roselle. Universally cultivated in gardens.

H. Surattensis.—Purple Hibiscus. A showy and early flowering annual.

H. rigidus and *crotonifolia* are mentioned by Dr. Royle as found at Delhi.

Abelmoschus esculentus—Okro: in Southern India Bandiki. A vegetable of universal cultivation.

A. ficulneus.—Very pretty and very abundant at Roobass.

A. moschatus—Yellow Hibiscus. Only one plant in Agra in Rambagh.

Gossypium herbaceum.—Country Cotton. The soil and climate of Agra appear to be very unfavorable to cotton. In 1843, I took great pains with some plants and they grew to a very large size, assuming quite a different form from their brethren in an adjoining field. Many plants were nine feet high and produced abundance of flowers; but the bolls generally fell off before regularly ripe. I have this year (1844) treated it as a biennial and as yet cannot say with what success.

G. hirsutum.—Upland Georgia Cotton. This has been treated exactly as the former, and with the same return. The cotton is certainly very fine in texture.

Abutilon graveolens.—A disagreeably scented shrub. Very common.

A. asiaticum.—Equally common, but valued by the natives as an application to sore eyes.

Sida humilis.—A common weed amongst the ruins of Futtehpoor Sikri.

S. centrota (*S. hastata of Gardens.*)—A pretty blue flower in the public gardens.

S. cordifolia.—A common uninteresting weed.

Urena sinuata.—The leaves of this plant are very pretty and render it worthy of cultivation, in addition to its flowers. It is only seen in the public gardens.

Malva Malvensis.—Edgeworth in Jour. As. Soc. 1838, p. 765. I have found this plant but rarely about Agra. January to March. I do not believe that it belongs to the genus Malva. Althea L.

BOMBACEÆ.

Bombax Malabaricum—Seemul. A few trees are seen about Agra; a very large one at the entrance to Rambagh.

BYTTNERIACEÆ.

Pentapetes phœnicea.—A pretty annual with white and crimson flowers.

Melhania Hamiltoniana. (*Pentaglottis tomentosa Wallich.*)—A pretty shrub, only seen on the north side of the Hattee durwaza at Futtehpoor Sikri.

Visenia umbellata.—A handsome tree in the Taj and Secundra gardens. Flowering in February and March.

TILIACEÆ.

Grewia asiatica.—Cultivated for the fruit in gardens. Ripe in April and May.

G. lævigata.—A pretty growing small tree: only one in the Taj.

Triumfetta pilosa.—A weed in uncultivated spots.

Corchorus acutangulus.—A very common weed near villages.

C. tridens.—Uncultivated but not very common.

C. fascicularis.—I have observed this wild once or twice.

C. olitorius—Jute. Sometimes cultivated near Agra in fields.

C. humilis (new species).—A small prostrate plant observed in very hard dry soils.—*Vide Appendix.*

ELÆOCARPEÆ.

Elæocarpus.—There is one tree of this genus in Rambagh with leaves that are not serrated. I do not know the species.

DIPTEROCARPEÆ.

Shorea Robusta—Saul. There are a few young trees in the Rambagh.

AURANTIACEÆ.

Feronia elephantum—Elephant apple. Several trees about Agra.
Ægle Marmelos—Bel. Some very fine trees in the cantonment of Agra.
Cookia punctata—Ampesh. A common fruit in the large gardens. Wampee of China.
Murraya exotica.—A very pretty small tree, in the large gardens.
Citrus decumana.—Pumpelmoes. Not very fine in Agra.
C. aurantium.—The orange and its congeners in several varieties are seen in great perfection in Agra and Gwalior.

HYPERICINEÆ.

Norysea (*Hypericum*) *cernua.*—One shrub of this pretty plant is to be seen in Agra, flowering abundantly in February and March.

GUTTIFERÆ.

I have never observed any member of this family in the North Western Provinces, but Dr. Royle mentions that *Xanthocymus pictorius* is found in some gardens at Delhi, and I think others might be cultivated with success at Rambagh.

MALPIGHIACEÆ.

Hiptage Madablota.—There is only one plant of this in Agra, and that a beautiful luxuriant creeper in the Rambagh. February to March.
H. obtusifolia—mentioned by Royle but not observed by me.

SAPINDACEÆ.

Cardiospermum Halicacabum.—A pretty leaved creeper, wild at Futtehpoor Sikri, cultivated in the Taj.
Euphoria Longan—Longan. A choice fruit: a few small trees in the Rambagh.
E. Lichi—Lichi. I only know of one young tree in the Rambagh.
Dodonæa Burmanniana.—There are several very thriving plants of this at Secundra. It is the commonest plant in Mysore.

MELIACEÆ.

Melia composita.—I believe this to be a fine tree rather uncommon about Agra.
M, Azedarach—Dek. This is a common and very beautiful tree.

M. sempervirens—Bukain. A much smaller plant found generally near wells; but I am very doubtful whether it is essentially different from the preceding.

Azadirachta Indica—Neem. Very common about Agra, and now planted to a considerable extent along the roads.

Cedrela toona—Toon wood. Some young plants are growing in the Rambagh.

AMPELIDEÆ.

Vitis vinifera—Grape vine. There are three or four varieties of the grape cultivated with great success in Agra. The fruit, however, is frequently damaged by the rains, and in consequence a little early forcing would be very desirable.

V. Carnosa.—A creeper on the sides of the rocks at Futtehpore Sikri.

GERANIACEÆ.

Erodium Chumbulense (new species.)—This annual Erodium I only found in one spot on the ravines of the Chumbul. I believe it is the first instance of an Erodium having been found on the plains of India.—*Vide Appendix.*

Pelargonium inquinans—Scarlet Geranium. This thrives very well in Agra.

P. asperum—Sweet Geranium. Flowers and seeds in Agra.

P. monstrum—Geranium. This is also very luxuriant. The ready way in which these three flower plainly indicate that many more of the same beautiful family might be introduced with advantage.

LINEÆ.

Linum usitatissimum—Flax. Commonly cultivated on the borders of fields. Some superior kinds have been tried in the Horticultural Gardens, but the seed was bad.

L. trigynum—Yellow flower, in almost every garden; flowers half the year.

BALSAMINEÆ.

Impatiens Balsamina.—Some of the Balsams in the garden of the Horticultural Society in 1843, would have been considered good in the best gardens in England.

TROPŒOLEÆ.

Tropœolum majus—Nasturtium. Very good in Agra. I observed the beautiful dark red variety in Mr. Boldero's garden.

OXALIDEÆ.

Oxalis corniculata.—Called *Shamrock* in India. A weed common everywhere.

O. Deppii.—I observed this pretty plant in Mr. Smith's garden at Delhi.

Averhoa Carambola—Carambole. An acid fruit in large gardens

A. Bilembi—Bilembi. More common than the preceding.

ZYGOPHYLLEÆ.

Tribulus lanuginosus—Crows foot thorn. An over-abundant and troublesome weed on all parade grounds.

Fagonia mysorensis.—This is rather a pretty plant never cultivated, and evidently the same as F. arabica of D. C. It is very abundant on the borders of the desert, and equally so on the rich cotton soils about Bellary.

Guiacum officinale—Lignum vitæ tree. There are a few young trees in the Rambagh which, however, were in flower in March 1844.

RUTACEÆ.

Peganum Harmala.—This plant is said not to be a native of Agra, but it has all the appearance of a native plant in the rugged ground between the Taj and the Fort. It is pretty and well deserving of cultivation.

Ruta angustifolia.—Rue. Not uncommon in gardens.

ZANTHOXYLEÆ.

Ailanthus excelsa.—A common, fast growing but useless tree.

CALYCIFLORÆ.

CELASTRINEÆ.

Celastrus paniculata.—There are some few plants in the Taj, scarcely worth the cultivation. There is a single plant of a pretty evergreen in Secundra, which I believe to belong to this family, but to some new genus.

RHAMNEÆ.

Zizyphus jujuba—Ber. A very common, productive fruit tree.

Z. œnoplia.—This tree is also not uncommon about Agra.

TEREBINTHACEÆ.

Mangifera Indica—Mango. This delicious fruit has been much neglected in the North Western Provinces. There are now numerous well grafted trees which, in a few years, will produce abundance of fruit. March.

Rhus Burki-amela.—A small tree or large shrub; in the Taj only; differing slightly from Roxburgh's. October.

Semecarpus anacardium—Marking nut. This is not a common tree about Agra.

Buchanania latifolia.—One small tree in Rambagh.

AQUILARINEÆ.

Aquilaria agallocha.—Uggur. This is a very beautiful tree in its foliage. There are, I believe, only three in Agra, all full grown trees.

MORINGEÆ.

Moringa pterygosperma.—Horse Radish Tree. In almost every garden.

LEGUMINOSÆ.

Sophora tomentosa.—A pretty shrub, in the Taj gardens only
Edwardsia mollis.—A very pretty shrub in the Taj.
Crotalaria verrucosa—A pretty shrub cultivated in gardens.
C. Sericea—A larger and prettier shrub.
C. Juncea.—Sun. A small patch of this in general seen in the middle of a field.
Crotalaria orixensis—A weed at Futtehpoor Sikri.
C. retusa—A small shrub in the Secundra gardens.
C. Burtria.—Ham. Rather a pretty plant found deep rooted in heavy sands.
Lupinus pilosus.—Hairy Lupine. A common annual—January to March.
L. linifolius.—Flax-leaved Lupine. Introduced this year—March.
Medicago denticulata.—Uncultivated in Secundra garden.
M. sativa.—Lucerne. Very generally cultivated in European gardens.
Trigonella Fœnum Græcum.—Methee. Cultivated in small patches in native gardens.
T. incisa.—Royle. In Secundra uncultivated.
T. corniculata—Cultivated in native gardens.
Melilotus pauciflora.—Methee. Very common: cultivated: good food for cows.
M. leucantha.—Uncultivated, but is good food for cows.
Cyamopsis psoraloides.—Universally cultivated in fields: a very pleasant vegetable.
Psoralea corylifolia.—Cultivated in the public gardens.
Indigofera tinctoria—Indigo. This is not much cultivated in the neighbourhood of Agra itself. The plant is seen wild and very luxuriant at Futtehpore Sikri.
I. trita.—An ugly weed at Futtehpore Sikri.
I. enneaphylla.—Futtehpore Sikri and other places near hills.
I. linifolia.—A common weed on flat level plains.
I. cordifolia.—Very common weed generally seen growing on sand banks with a species of Saccharum.
I. atropurpurea.—A very handsome shrub in the Taj: cultivated: September to Novr.
I. paucifolia.—An uncommon weed near the Jumna.
Clitoria Ternatea.—Blue creeper. This is the prettiest creeper to be found about Agra and comes into flower as the hot weather commences.
Tephrosia purpurea—Wild Indigo. A common uncultivated low shrub.
T. diffusa.—This is equally common, and pushes its way through a great depth of sand.
Sesbania ægyptiaca.—A small tree generally found near villages.

S. aculeata.—Shrub. Found in marshy places.

Agati grandiflora.—A few stunted plants of the scarlet variety of this tree flowered in the public gardens this year, in February and March.

Œschynomene Indica.—A tall shrub found in wet marshy ground.

Smithia sensitiva.—Sensitive plant. In the public gardens cultivated.

Lourea vespertilionis.—Bat leaf. One or two plants in the Horticultural Society's Gardens.

Zornia angustifolia.—A small weed on the ruins of Futtehpore Sikri.

Uraria picta.—Mentioned by Royle, but not observed by me.

Desmodium triquetrum.—A common plant in the Taj, cultivated.

D. Gangeticum.—There are a few plants in the Taj.

Dicerma pulchellum.—There is one plant of this pretty species in the Taj.

Hedysarum coronarium.—French honeysuckle. This plant has been recently introduced to Agra, and thrives remarkably well.

Alhagi Maurorum.—Camel Thorn. Abundant in every direction, uncultivated.

Alysicarpus monolifer.—A weed not very common.

A. styracifolius.—A tall and rather pretty weed, uncommon.

Cicer arietinum.—Gram. An agricultural plant, cultivated to a great extent.

Ervum lens.—Mussoorie. Commonly cultivated with the former.

E. hirsutum—A weed seen in cultivated ground.

Vicia sativa Khardee.—A small portion of this is generally found amongst other grains.

V. Cracca.—Mentioned by Dr. Royle.

Lathyrus sativus.—Field Pea. Generally found in ground that is rather moist.

L. odoratus.—Sweet Pea. Flowers well in gardens. In March and April.

L. aphaca.—Leafless Pea. Rather a pretty weed found in gardens near the Jumna.

L. angulatus.—Small Pea. Hort. Soc. Gardens raised from hill seeds.

Pisum arvense.—Muttur. Cultivated to a considerable extent by natives.

P. sativum.—Garden Pea. This thrives very well for many months at Agra.

Faba vulgaris.—Broad Bean. This merely grows at Agra. The produce is little more than equal to the seed sown.

Abrus precatorius.—Wild liquorice. I have only observed one plant of this in the Taj. The ripe pods are so pretty, that it ought to be cultivated.

Rhynchosia Medicaginea.—A weed, at Futtehpoor Sikri.

Flemingia semialata.—A pretty shrub. In the Taj cultivated.

Phaseolus aconitifolius.—Moth. Universally cultivated as an Agricultural crop, sometimes sown by itself, and sometimes with Bajra and Cotton. This is one of the plants that was attacked by the locusts. It appears to be very good food for horned cattle.

P. Mungo—Moog. An agricultural crop generally sown with Jooar.

P. radiatus—Mash. Not much cultivated about Agra.

P. lunatus—Country Beans. Often seen in gardens cultivated.
P. vulgaris—French Beans. Thrive well in Agra.
P. aureus—Hb. Ham. Moong. Mentioned by Royle.
P. cuneatus.—Royle. Bangur ke moth. Mentioned by Royle.
Dolichos Sinensis.—An agricultural plant not generally cultivated.
Lablab vulgaris.—One or two of the handsomer varieties of this plant are cultivated in Rambagh.
L. cultratus.—This is seen generally cultivated in native gardens.
Canavalia gladiata.—Very large Bean. I have only observed this at Secundra, cultivated.
Mucuna utilis—Pois Noire. This succeeds well in Agra. Sown at the end of the rains.
Cajanus indicus—Urhur. Very generally grow in hard dry soils.
Erythrina suberosa—Coral tree. This tree is not uncommon about Agra, and is very beautiful in March.
E. spathacea?—There are two plants of an Erythrina in Rambagh, which I cannot name and only guess the name I have attached to them.
Butea frondosa—Dak or Pulass. Very common in low jungly ground. There are some fine trees in the Civil Lines of Agra. It is not generally known that the roots of this tree afford a fibre which, under the name of Bukhul, is a very good substitute for oakum.
Dalbergia Sissoo—Sisum tree. Now very generally planted on the roads at Agra. After these trees have thriven for some years, they very frequently die away without any apparent cause.
Mimosa pudica—Most sensitive plant. Common in European gardens.
M. rubicaulis.—I only have seen one plant of this pretty creeper and that at Bhurtpoor.
Inga dulcis—Drooping tree. One or two in Taj. July.
Desmanthus virgatus.—Cultivated in Hort. Soc. Gardens. But barely deserving of any care.
Dichrostachys cinerea.—This is a very beautiful tree when in flower, it constitutes a considerable portion of the Bhurtpoor Rajah's Rumna, at Roobass.
Prosopis spicigera.—I only saw this handsome tree near the canal at Delhi.
Vachellia Farnesiana.—This sweet smelling tree is rare about Agra.
Acacia speciosa—Siriss. This is now abundantly planted about Agra, and is one of the handsomest trees in India. March.
A. frondosa.—A small pretty tree. Not uncommon in gardens. September.
A. arabica—Babool. Very common every where, and very useful.
A. elata?—Some fine seedlings of an Acacia are in Secundra, which have not flowered.
A. modesta and *alliacea* are mentioned by Dr. Royle.
Arachis hypogæa—Earth nut. Cultivated in gardens.
Guilandina Bonduc.—There are a few young plants in the Taj.

Cæsalpinia sepiaria.—There is one fine plant of this in a native garden on the Jumna.
Poinciana pulcherrima—Peacock's pride. A beautiful tree. Very common. March.
Parkinsonia aculeata.—Sacred thorn. A common tree about gardens of Europeans.
Tamarindus indica—Tamarind. Very common and peculiarly fine at Agra.
Cathartocarpus Fistula.—A very beautiful tree common in gardens, but very fine at Secundra. Generally thrives best over wells. The long bunches of yellow flowers are excessively handsome.
Cassia glauca.—A small tree in large compounds.
C. occidentalis.—In gardens at Agra and Bhurtpoor.
C. tora.—Found as a weed in dry spots.
C. sophora.—Cultivated! in the Rambagh.
C. pumila.—In moist ground, near the quarries at Roobass.
C. absus.—Not an uncommon weed.
C. lanceolata—Senna. This thrives remarkably well at Secundra, but not so well in the gardens near the river. March.
Bauhinia variegata.—This beautiful tree is pretty common about Agra. March.
B. tomentosa.—Two or three shrubs in Secundra.
Leguminosæ.—Uncertain. 1.

ROSACEÆ.

Rubus lasiocarpus.—A few young plants in Mr. Grant's garden.
R. rotundifolius.—A few plants in the same garden.
Fragaria vesca—Strawberry. This has been often tried in Agra, but not with much success, it is thriving very well in Mr. Grant's garden.
F. collina—Alpine Strawberry. This thrives very well in the same garden.
Potentella supina, LINN.—A weed common on the banks of the Jumna.
Rosa indica—Indian Rose. Cultivated in gardens.
R. microphylla—Chinese Rose. In the public gardens.
R. damascena—Goolab Rose. In all gardens.
R. Brunonis—Single white Rose. At Rambagh only.
R. centifolia var: vulgaris—Rose Edward. Thrives very well at Agra.
R. rubiginosa—Sweet Briar. In some few gardens.
R. multiflora—Small double rose. In the Taj gardens only.
Ercobotrya Japonica—Loquat. Thrives very well at Agra.
Pyrus sinica—Pear. In all large gardens, but the fruit is very indifferent.
Prunus Bokhariensis—Aloo Bokhara. This succeeds very well at Agra.
P. triflora—Plum. Common in large gardens.
P. domestica—Greengage. There are some young trees in Mr. Boldero's garden.
Armeniaca vulgaris—Apricot. There are a few trees in Agra, that have not flowered.
Amygdalus persica—Peach. This thrives well in Agra, and there is a very peculiar variety cultivated in the Taj, quite flat.

LYTHRARIEÆ.

Ameletia tenuis.—A pretty little plant only observed on the banks of the Chumbul.

Ammannia pentandra.—Observed in the same place as the above.

Lawsonia alba—Mendhee. This is very common about Agra, and cultivated in large fields near Futtehpoor Sikri.

Grislea tomentosa.—A red flowering shrub. In large gardens.

Lagerstræmia indica.—I have only once observed this handsome shrub, and in a private garden.

COMBRETACEÆ.

Anogeissus acuminatus.—I suppose this to be the plant called Conocarpus myrtifolius by Royle. I have seen it for many miles covering the low hills bordering the Agra District towards Dholpoor, and it is the principal tree in the Rumna of the Raja of Dutteah.

MYRTACEÆ.

Punica Granatum—Pomegranate. A common fruit tree.

Psidium pyriferum—White Guava. Common in gardens.

P. pomiferum—Red Guava. Not so common, and by no means so nice a fruit.

Myrtus communis—Common Myrtle. Grows well at Agra.

Syzygium Jambolanum—Jamun. A fine tree common about Agra.

Pimenta acris—Allspice tree. Four good sized trees are in the Rambagh.

ONAGRARIÆ.

Jussiæa repens.—A common weed on the sides of water courses.

J. villosa.—Equally common in similar situations.

Ludwigia parviflora.—This is weed native of marshy places.

Trapa bispinosa—Singhara. Cultivated about Futtehpoor Sikri and Dholpoor.

Œnothera biennis—Evening primrose. This pretty flower has been now for twelve months in flower, in the Hort. Gardens.

Œ. Introduced this year. In Hort. Soc. Garden.

Godetia lepida.—A pretty annual in one or two gardens.

Clarkia elegans.—A favorite annual, introduced this year.

CUCURBITACEÆ.

Lagenaria vulgaris—Bottle Gourd. In native gardens; cultivated.

Cucumis Melo—Melon. Khurbooz. Very fine at Agra, on the banks of the river.

C. utilissimus—Kukrie. A pleasant kind of cucumber. Common.

C. Momordica—Phoot. Seldom found in gardens.

C. sativus—Cucumber. Grows well if water does not lodge near it.

Bryonia scabrella.—Very generally found creeping over Saccharum Munja.
Coccinia Indica.—This pretty creeper is often wild in the jungles about Bhurtpoor.
Momordica Charantia.—Futtehpoor Sikri: uncultivated. Fruit pretty.
M. dioica.—Seen in some old and only partially cultivated gardens.
Trichosanthes anguina—Snake cucumber. Much cultivated. A great favourite with the natives.
T. dioica—Pulwul. A fruit eaten by the natives.
T. cucumerina—Junglee churbinda, mentioned by Royle.
Luffa pentandra.—A large creeper. Not common about Agra.
L. acutangula—Kalee tori. In some native gardens.
Cucurbita pepo.—Pumpkin. Grown to a considerable extent on the Jumna.
C. citrullus—Water Melon. Turbooz. Very fine at Agra.

PAPAYACEÆ.

Carica Papaya—Papaw. Thrives very well in the large, well sheltered, gardens.

PASSIFLOREÆ.

Passiflora laurifolia—Sweet scented Passion flower. In the Taj cultivated.
P. racemosa—Passion flower. One or two plants in Rambagh.
P. edulis ?—Passion flower. In all the public gardens common.

PORTULACEÆ.

Glinus lotoides.—A common uninteresting weed lying flat on the ground.
Trianthema obcordata.—A very common weed, grows very strong in the rains.
T. crystallina.—This is equally common in garden ground.
T. decandra.—A common weed every where.
Portulaca quadrifida.—A frequent weed lying close to the ground.

POLYCARPEÆ.

Polycarpæa corymbosa.—A common weed on dry ground throughout India.
Arversia Indica.—An equally common weed.

CRASSULACEÆ.

Bryophyllum calycinum—Air plant. Common in gardens.

MESEMBRYANTHEMEÆ.

Mesembryanthemum crystallinum—Ice plant. This is quite at home at Agra, and thrives extraordinarily well, and looks very refreshing in the hot weather.

CACTEÆ.

Opuntia Dillenii—Common Cactus. Not common about Agra, but abundant round the villages near Bhurtpore.

O. cochinillifer—Cochineal plant. This thrives very well in Agra. Flowering in March.

Cactus stellans—Stumpy Cactus. One plant in the Rambagh.

C. two species which I cannot name, in pots, in the Rambagh.

UMBELLIFERÆ.

Coriandrum sativum—Coriander seed. Very generally cultivated.

Apium graveolens—Celery. Does not come to great perfection in Agra.

A. petroselinum—Parsley. In some gardens belonging to Europeans.

Daucus carota—Carrot. Grown in gardens and in fields.

Anthriscus cerefolium—Chervil. In the gardens of the Horticultural Society.

Ptychotis Ajowan—Ajowan. Universally cultivated.

Fœniculum Panmori.—A small quantity in most gardens.

Pimpinella? involucrata—Country parsley. In all gardens.

Anethum sowa—Sowa. Commonly cultivated.

Pastinaca sativa—Parsnip. Succeeds well in some gardens.

LORANTHACEÆ.

Loranthus bicolor.—I have observed this but seldom, parasitic on trees in the Bhurtpore Jungles.

CAPRIFOLIACEÆ.

Lonicera Chinensis—Honeysuckle. Flowers freely in gardens at Agra, if not stunted in growth and allowed to take a wide range.

RUBIACEÆ.

Nauclea cordifolia.—I have only seen this once in Agra in a native garden.

Randia dumetorum—Muenphul. A few trees in the Taj.

Dentella repens.—Not an uncommon weed.

Hedyotis Burmanniana.—A not uncommon weed.

H. aspera.—A weed which grows very large in the ravines of the Chumbul.

H. dichotoma.—A rare and elegant little weed.

Leptodermis lanceolata.—A pretty shrub. In the Taj: cultivated.

Ixora coccinea.—One very fine plant in the Rambagh.

I. parviflora.—A large shrub in the Taj.

Pavetta Indica.—Not uncommon amongst clumps of trees. Uncultivated.

Coffea Arabica—Coffee. There are six large plants in the Rambagh, very healthy in appearance, but which never flower.

C. benghalensis. Unlike the preceding, this pretty shrub is one mass of white flowers in February and March.

Bigelowia lasiocarpa.—A common weed at Futtehpore Sikri.

Spermacoce hispida.—Roobass is the only place where I have observed this plant.

Serissa fœtida, var. fl. pl.—This pretty little shrub flowers abundantly in March in the public gardens.

COMPOSITÆ.

VERNONIACEÆ.

Vernonia cinerea.—A common weed amongst shrubs.

Elephantopus scaber.—A weed common in the Bhurtpore district under trees.

ASTEROIDEÆ.

Vicoa Indica.—A very prevalent weed throughout India.

Francœuria crispa.—A strong scented weed which covers a large extent of ground near the ice pits at Agra.

Cæsulia axillaris.—A weed to be found in all very wet situations.

Sphæranthus amaranthoides.—Rather a rare weed on the banks of the river.

Cyathocline lyrata.—Very common on the river side.

Berthelotia Indica.—A common weed about Agra, rather pretty. The large plains of Ferozepore were covered with this plant.

Grangea Madraspatana.—A weed not uncommon where water has lodged.

Blumea Wightiana.—Rather a common plant uncultivated.

Eclipta prostrata.—A weed very common.

SENECIONIDEÆ.

Chrysanthemum coronarium.—In gardens in several varieties.

C. carinatum, vulgo tricolor.—A pretty annual in gardens.

Pyrethrum indicum.—A pretty double flowering shrub.

Calliopsis Atkinsoniana.—A very pleasing annual or biennial.

Cosmos caudatus.—A pretty, but rather weedy annual.

Xanthium indicum.—A common weed near the river.

Helianthus annuus—Sun flower. In gardens common; flowers twice a year.

H. tuberosus—Jerusalem Artichoke—in gardens rarely cultivated.

Calendula officinalis—Pot Marygold. Commonly cultivated.

Lasthenia glabrata.—An annual introduced this year. In one garden only.

Madia sativa—Chili oil seed. Thrives very well in Agra.
Zinnia elegans—Scarlet Zinnia. This comes to great perfection in gardens.
Ximenisia enceliodes.—A pretty yellow flowering annual.
Glossogyne pinnatifida.—Wild about the quarries at Roobass.
Spilanthes calva.—Not an uncommon weed in gardens.
Matricaria suaveolens.—A pretty white flowering plant in gardens.
Glossocardia Boswellia.—A small weed amongst the sandstone hills at Roobass.
Artemisia indica.—A shrub in the Taj: cultivated.
Artemisia vulgaris.—A tall shrub in the Taj.
A. sp. nov.?—A low plant found wild on sand hills about Dholpoor.
Chrossostephium artemisioides.—A small plant much resembling Artemisia: cultivated at Secundra.
Myriogyne minuta.—A very diminutive weed.
Gnaphalium indicum.—Common weed near the river.
Antennaria cinnamomea.—A low plant common about Ferozepore and of which I introduced a few plants to Agra.
Emilia sonchifolia.—Not an uncommon weed.
Notonia grandiflora.—A Neelgherry plant which thrives very well in gardens at Agra.
Tagetes erecta—African Marygold. Very fine at Agra.
T. patula—French Marygold. Thrives well at Agra in gardens.

CYNAREÆ.

Echinops echinatus.—There is at Roobass a blue variety very pretty, apparently coloured with the iron which abounds in the rocks.
Centaurea pulchra—Cashmere Corn flower. A very pretty annual. Rare.
C. cyanus—Corn flower. In every garden.
Amberboa odorata—Sweet Sultan. In a few gardens recently introduced.
Cnicus benedictus—Blessed Thistle. In one of the gardens only.
Carduus defloratus—Thistle. In Mr. Jackson's garden.
Onopordum Acanthium—Cotton Thistle. This pretty plant thrives well at Agra.
Carthamus tinctorius—Koosum. An agricultural plant.
Cirsium Wallichii.—A weed common on dry ground.
Cynara Scolymus—Artichoke. Very fine in Agra.
Calendula officinalis—Pot Marygold. Commonly cultivated.

MUTISIACEÆ.

Dicoma lanuginosa.—A weed on the hills of Dholpoor.

CICHORACEÆ.

Brachyramphus sonchifolius.—Rather a common weed, grows very large in the ravines of the Chumbul.

Cichorium Endivia—Endive. A vegetable common in gardens.
Lactuca sativa—Lettuce. Universally cultivated in gardens.
Sonchus ciliatus.—A weed not uncommon about Agra.
Tolpis barbata—Hawk weed. A pretty annual recently introduced.
Pieridium Tingitanum—Tangier. A common annual in Gardens.

CAMPANULACEÆ.

Campanula canescens.—I have only observed this growing between the stones of the walls at Rambagh.

COROLLIFERÆ.

SAPOTEÆ.

Mimusops elengi.—A handsome tree to be found in every garden. Mulsari.
M. hexandra.—A tree not so common as the preceding, but more elegant.

JASMINEÆ.

Nyctanthes arbor tristis—Hursingar. A pretty shrub in large gardens.
Jasminum chrysanthemum—Yellow Jasmine. A pretty shrub.
J. grandiflorum—White Jasmine. In the Taj only.
J. Zambac—Mogra. A general favorite with the natives, in all their gardens.
J. officinale—Common Jasmine. In many gardens.
J. revolutum—Yellow Jasmine. In the Rambagh.

APOCYNEÆ.

Carissa Carandas—Koorund. A common shrub cultivated for the fruit.
C. diffusa—Often found in native gardens.
Allamanda cathartica.—A pretty yellow flowering shrub in gardens.
Thevetia sp:—(Cerbera Thevetia). A large shrub very pretty in gardens.
Nerium odorum—Oleander. Very abundant about Agra.
Tabernæmontana coronaria—Moorman's Rose. The double flowering variety is very common in gardens throughout India.
Plumeria acuminata.—A small tree in all the large gardens, cultivated.
Lochnera rosea (*Vinca rosea*)—Periwinkle of India. Very common and very pretty.
Vinca minor.—A small weed very common in cultivated grounds.
Vallaris dichotoma.—A pretty sweet scented creeper. In the Taj only.

ASCLEPIADEÆ.

Cryptostegia grandiflora—(Nerium grandiflorum). A powerful creeper in many of the compounds at Agra in which it appears to have been planted as a standard tree by mistake.

Oxystelma esculentum.—I have only observed this pretty creeper once in marshy grounds, near Bindrabund.

Doemia extensa.—In gardens on the banks of the Jumna, uncultivated.

Leptadenia spartium.—A small shrub on the Jumna.

Calotropis Hamiltonii.—Very common; it is exceedingly like C. Gigantea.

Asclepias curassavica.—Commonly cultivated as a garden flower.

Pergularia pallida.—Rather pretty creeper, common in old buildings.

Pentatropis microphylla.—A creeper common in the Bhurtpore Jungles.

Stapelia Variegata.—A few plants in the Rambagh in pots.

GENTIANEÆ.

Hippion hyssopifolium.—At the foot of the Hill at Futtehpoor Sikri, and in the ravines of the Chumbul.

Exacum pedunculatum.—In this part of India more rare than in S. India.

Cicendia Roxburghii.—Common in moist grounds near Agra.

SOLANEÆ.

Physalis somnifera.—A common weed.

P. peruviana—Brazil cherry. In gardens cultivated.

P. minima.—An abundant weed.

Datura alba—Stramonium. Pretty common in gardens.

Hyoscyamus niger—Henbane. Common in gardens in the N. W. Provinces.

Solanum Melongena—Brinjal. In every garden cultivated.

S. indicum.—A weed common, particularly on the Chumbul.

S. Jacquini.—A thorny shrub—wild.

S. fistulosum.—Common weed in gardens.

S. rubrum.—Common in gardens, very like the preceding.

S. tuberosum—Potatoe. This might be cultivated to advantage in Agra.

Lycopersicum esculentum—Love apple. Very generally cultivated.

Nicandra indica.—A pretty blue flower in gardens.

Capsicum frutescens—Capsicum. Commonly cultivated.

C. fastigiatum—Bird Pepper. In some gardens cultivated.

Nicotiana. Tabacum—Tobacco. Cultivated in the neighbourhood of most villages.

Petunia violacea.—A most elegant purple creeper introduced this year. In two gardens.

SCROPHULARINEÆ.

Gerardia delphinifolia.—In one or two places near the Utangan River.

Linaria tripartita.—A pretty cultivated garden flower—Cold season.

L. triphyllâ.—The same as the preceding.

L. ramosissima.—A pretty weed, common on cultivated grounds, and on the sides of the river.

Lindenbergia urticæfolia.—A common weed.
L. macrostachya.—Rather handsome, near wells on the Jumna.
Vandellia crustacea.—A common weed on pasture ground and moist places.
Veronica agrestis.—A pretty but common weed in cultivated ground.
V. anagallis.—On the river side uncultivated.
Budleia Neembda.—A delightful shrub in the large public Gardens.
B. Madagascariensis.—A sweet scented flowering shrub. In Taj.
Mazus rugosus.—Banks of the Jumna. A weed.
Celsia Coromandeliana.—A pretty weed not uncommon.
Verbascum Thapsus.—Rather a pretty long spiked plant. In gardens.

OROBANCHEÆ.

Orobanche indica.—Very abundant about Agra, parasitic on the roots of wheat and barley.

PEDALINEÆ.

Pedalium murex.—Found wild in many places about Agra. Rather a pretty flower.

BIGNONIACEAE.

Sesamum orientale—Til. Commonly cultivated in fields.
Tecoma radicans. A pretty shrub, common in gardens.
Bignonia undulata. Several trees in the Public Gardens.
B. chelonoides.—A sweet scented flowering tree in Secundra.
B. suberosa.—Also sweet scented, a few trees in the public gardens.

ACANTHACEÆ.

Thunbergia alata.—Buff creeper in every garden.
Hexacentris coccinea.—In Rambagh and Horticultural Society's Gardens.
Elytraria crenata.—A weed found under Mango trees.
Dipteracanthus dejectus.—A common weed amongst bushes.
Petalidium Barlerioides.—A very pretty shrub. In the Public Gardens. Cultivated.
Asteracantha longifolia.—Common in all marshy grounds. Snipe are very fond of this.
Barleria dichotoma.—A pretty shrub in gardens: cultivated.
B. prionitis.—In native gardens frequent; wild at Futtehpoor Sikri.
B. cristata.—Blue flowering shrub. Common.
B. hystrix.—Sometimes seen in old native gardens.
Lepidagathis Hamiltoniana.—A curious thorny flowering plant, in dry soils out of cultivation and particularly on the Chumbul.
Eranthemum nervosum.—One of the commonest and most beautiful of Indian shrubs.
Justicia Ecbolium.—A common but pretty shrub: cultivated.
Adhatoda vasica.—Pretty shrub in the large gardens.
Rhinacanthus communis.—In all the large gardens.

Blepharis boerhaviæfolia.—An uncommon and ugly weed.
B. molluginifolia.—A weed, generally in stony ground.
Rungia parviflora.—In moist Dâk jungles at Roobass.
R. repens.—Rather a pretty weed by no means rare.
Peristrophe bicalyculata.—A weed found all over India.
Rostellaria quinquangularis.—A weed at Futtehpoor Sikri.
R. crinita.—A weed about Agra, common.
Erianthera serpyllifolia.—A common weed in hard dry soils.
Andrographis paniculata.—Common amongst bushes. Uncultivated.

VERBENACEÆ.

Lippia (*Zapania*) *nodiflora.*—Observed near Delhi and Kurnaul.
Verbena (*Stachytarpheta*) *mutabilis.*—In gardens cultivated.
Lantana pilosa—Kunth? On the banks of the Chumbul.
L. dubia.—On the banks of the Jumna. Royle.
Vitex negundo—Nisinda. A valuable shrub in many gardens.
V. trifolia.—Common, cultivated in the outskirts of Agra and Muttra.
Tectona grandis—Teak. Two miserable specimens in the Taj.
Volkameria aculeata.—A pretty shrub, in the Taj one plant only.
Clerodendron fragrans var. fl. pl.—Double white flower, deliciously fragrant in the Taj only; flowering in March.
C. phlomoides.—Very abundant in the jungles of Bhurtpore, giving a pleasing appearance to the various clumps of small trees.
C. siphonanthus.—A pretty shrub: Taj cultivated.
C. nereifolium.—A shrub in the gardens at Agra.
C. gratum.—Very handsome in February and March, in the Taj.
Callicarpa macrophylla.—Some large shrubs in the Taj.
C. purpurea.—A strong scented shrub, common throughout India.

LABIATÆ.

Ocymum sanctum.—A common shrub near temples.
O. basilicum.—Found in similar places to the preceding.
Anisochilus carnosus.—A very rare weed amongst ravines.
Colebrookia oppositifolia.—One shrub in the Taj, introduced from the hills.
Mentha viridis—Mint. In some gardens.
Meriandra Bengalensis—A very pretty annual remaining long in flower.
Salvia plebeia.—An ugly weed on the banks of the Jumna.
Nepeta ruderalis.—Found in company with the above plant.
Dracocephalum Royleanum—Balungoo. Cultivated according to Royle.
Leonurus Tataricus.—Rare in European, common in native gardens.
Anisomeles Malabarica.—Rather a pretty weed about Futtehpoor Sikri.

Roylea elegans.—Thrives well in gardens at Agra.
Leucas cephalotes.—Very common weed in sandy soils.
L. urticæfolia.—A weed not uncommon.
Leonitis nepetæfolia—Hechurchee. A red flowering weed, in hedge rows.
Eremostachys superba.—A very beautiful yellow flower, introduced from the lower hills to the public gardens.

BORAGINEÆ.

Messerschmidtia hispida.—A weed not uncommon.
Heliotropium Peruvianum—Heliotrope. Only one plant in Rambagh.
H. supinum.—A weed found near the Jumna.
H. europæum.—Found in pasture ground; not uncommon.
H. brevifolium.—Principally observed in the rains and then very abundant.
H. coromandelianum.—Also a common weed.
Cerinthe aspera.—An annual recently introduced.
Echium vulgare.—This, one of the most beautiful of native English Flowers, thrives well at Agra. January to April.

CORDIACEÆ.

Cordia myxa.—A common tree about Agra.
C. angustifolia.—Also found; but not nearly so common as the preceding.

CONVOLVULACEÆ.

Quamoclit Phœnicea—Crimson convolvulus. A lovely creeper in the rainy season.
Q. vulgaris—Chinese creeper. Equally common and equally pretty.
Convolvulus arvensis.—Very common in the fields.
Ipomœa pescaprœ.—A common trailing plant about Agra.
I. dasysperma.—A pretty creeper in the wet seasons.
I. reptans.—Common about Agra.
I. coptica.—A very pretty small flowering Convolvulus: uncultivated.
Batatas pentaphyllus—Convolvulus. Common crepeer.
B. edulis—Sweet potatoe. Cultivated to a great extent.
Pharbitis Nil.—A very beautiful blue creeper. Futtehpore Sikri, uncultivated.
P. hispida—Convolvulus Major. Thrives well at Agra.

NOLANACEÆ.

Nolana prostrata.—A pretty blue flower introduced this year, well adapted for India.

PRIMULACEÆ.

Anagallis arvensis.—A rare weed in cultivated ground.

PLUMBAGINEÆ.

Plumbago zeylanica—Chitraka. In some few gardens, neglected.

SALVADORACEÆ.

Salvadora persica.—A very common tree over a large extent of country, droops very prettily. It is the principal tree in the Protected Seik States.

S. Indica.—Royle. This tree is generally seen singly—the fruit is not unpleasant.

PLANTAGINEÆ.

Plantago Ispaghula.—I have observed this plant about Agra but never cultivated.

MONOCHLAMYDEÆ.

NYCTAGINEÆ.

Boerhaavia diffusa.—A common weed grows very large in the rains.

B. repanda.—Quite different in general appearance and much rarer.

Mirabilis jalapa—Marvel of Peru. In the large gardens cultivated.

POLYGONEÆ.

Polygonum herniarioides.—A weed common in many places, very pretty.

P. Chinensis.—A few plants in the Taj.

Rumex vesicarius.—Very commonly cultivated as a pot herb.

R. dentatus.—Common about Agra; uncultivated.

CHENOPODEÆ.

Beta Benghalensis—Pulung. Very common in gardens.

B. vulgaris—Beet-root. Very generally cultivated: not good in Agra.

Chenopodium album—Bhutwa. Very common in gardens.

C. Botrys.—Also common in gardens.

Atriplex hortensis.—Very common in gardens.

Salsola indica.—Grows abundantly on the banks of the Jumna.

Basella rubra—Common spinach. A very common plant.

Spinacia tetrandra—Spinach. Equally common.

PHYTOLACCACEÆ.

Gisekia pharnaceoides.—A rare weed appearing in the rains.

AMARANTACEÆ.

Aerva Javanica.—A white hoary looking weed; pretty common.

A. tomentosa.—I almost think this is a variety of the preceding, equally common.

Gomphrena globosa—Batchelor's Button. A common annual.
Achyranthes aspera.—A rough weed, very common.
Desmochœta lappacea.—By far too common a weed, as it is a very troublesome one.
Celosia argentea.—A pretty weed, very common.
C. cristata—Cockscomb. Grows very fine at Agra.
Digera arvensis.—Mentioned by Royle, unknown to me.
Amaranthus tristis.—Cultivated as a species of greens by the Natives.
A. polygamus.—The same use is made of this plant.
A. polygonoides.—Spotted leaved greens, same as preceding.
A. gangeticus.—Greens, same as preceding.
A. tricolor.—A pretty annual. Not often seen.
Allersia oleracea—Red, same as preceding.
A. polystachya.—Many spiked greens, same as preceding.

SANTALACEÆ.

Santalum Album—Sandal-wood. There are many small trees in Agra, which flower well, but never grow large.

LAURINEÆ.

Cassytha filiformis.—Very often seen, parasitic, on trees and shrubs.
Cinnamomum.—There are several plants of a species of this genus, very young in the Rambagh.

EUPHORBIACEÆ.

Pedilanthus tithymaloides.—Not uncommon in old gardens.
Phyllanthus Niruri.—A common weed in the rainy season.
Melanthesa vitis Idoea.—A pretty shrub, not uncommon in gardens.
Emblica officinalis.—A fruit tree, not uncommon.
Acalypha Indica.—A common weed.
Tragia cannabina.—On the plains of Roobass, pretty common.
Croton polyandrum—Jumalgotta. In the Taj only. I do not think this is a Croton.
Ricinus communis—Castor Oil. Common. One or two pretty varieties.
Jatropha trifida.—Coral shrub; in the Taj.
Crozophora plicata.—A weed found in the nullahs that lead to the river.
Euphorbia antiquorum—. In some few gardens.
E. heptagona—(*nobis*).—In the Taj. This is a curious but handsome looking thorny Euphorbia, to which I have merely given a locum tenens name.
E. splendens.—A really beautiful plant in great perfection at Agra.
E. tirucalli.—Milk hedge. Rather uncommon about Agra.
E. lævigata?—Common in cultivated ground.
E. hirta.—A low growing common weed.
E. parviflora.—Grows on the pavements at Futtehpoor Sikri.

ARISTOLOCHIEÆ.

Aristolochia bracteata.—This curious looking plant only grows about Futtehpoor Sikri and Roobas.

CANNABINEÆ.

Cannabis Sativa.—Hemp. Very common about Agra.
Artocarpus lakoochi—Burhul. A fine tree in the large gardens.
A. integrifolia—Jak fruit. In the large gardens.

MOREÆ.

Morus lævigata—Mulberry. In large gardens.
M. parvifolia.—Royle. Not uncommon in gardens.
M. Cashmeriana ?—A fine large fruit Mulberry, grafted in general.
Ficus carica—Fig. Succeeds tolerably well in Agra.
F. religiosa—Peepul. Many fine trees about Agra.
F. indica—Banyan. Several old trees near Agra.
F. Tsiela.—A fine tree planted near the larger tombs at Agra.
F. elastica—India Rubber tree. One plant in Rambagh.
F. conglomerata.—A splendid tree, always bearing fruit. Common.
F. oppositifolia—Kakodoomar. Rather common near the Jumna.
F. glomerata.—A fine tree, not uncommon. There are one or two other Fici.

SALICINEÆ.

Salix babylonica—Willow. There are some few trees in the gardens at Bhurtpore.

CASUARINEÆ.

Casuarina muricata—Casuarina. A few trees in the Taj.

CONIFERÆ.

Pinus longifolia—Cheer. Succeeds well in Agra, there is one very fine tree in the Rambagh.
Cupressus Sempervirens—Cypress. Thrives very well in the Taj.
C. pendula.—Several of this in the Taj.
Thuja orientalis.—In the public gardens.

CYCADEÆ.

Cycas revoluta.—Two or three plants in the Taj.

MONOCOTYLEDONEÆ.

MUSACEÆ.

Musa Paradisiaca—Plantain. Commonly cultivated in gardens.

Musa sapientum—Banana. Some good varieties: cultivated.
Ravenalia Madagascariensis.—One plant in the Taj.

SCITAMINEÆ.

Curcuma longa—Turmeric. Cultivated in gardens.
Hedychium Sp.—There are a few plants in the Rambagh which have not yet flowered. There are also one or two other Scitamineæ, of which I have never observed the flowers.

IRIDEÆ.

Pardanthus chinensis.—A pretty plant in gardens; cultivated.
Iris nepalensis?—Iris. Thrives very well in gardens, January to March.
Sparaxis tricolor.—A few bulbs in Mr. Grant's garden. March.
Witsenia corymbosa.—One or two bulbs in the same garden.

AMARYLLIDEÆ.

Narcissus Tazetta—Narcissus. Flowers well in Agra, in December and January.
Amaryllis (*Zephyranthes*) *Rosea.*—Pretty commonly cultivated.
A. longifolia.—One plant in Agra.
A. (*Nerine*) *undulata.*—I have only observed one plant of this in Agra.
Pancratium zeylanicum.—Large flower in many gardens.
P. longiflorum.—In many places about Agra, now uncultivated.
Brunsvigia falcata.—A few bulbs in one private garden.
Crinum latifolium—Sook-durun. Some large masses in the Taj.
Agave vivipara.—Not common about Agra. More prevalent about Delhi.
Hæmanthus tigrinus.—Several bulbs in Agra gardens.

HYDROCHARIDEÆ.

Ottelia (*Damasonium*) *Alismoides.*—In large tanks, not uncommon.
Hydrilla verticillata.—Very abundant in open tanks.

DIOSCOREÆ.

Dioscorea sativa—Yam. Frequently cultivated.

PONTEDEREÆ.

Monochoria sagittata—Pond weed. Very common.
M. vaginalis.—Also generally found in standing water.

LILIACEÆ.

In its comprehensive sense.

Tulipa Gesneriana.—A few bulbs which have not flowered in Hort: Society's gardens.

Polianthes tuberosa—Tuberose. Very common, always single in Agra.
Aloe Indica?—A common plant cultivated and apparently indigenous.
Yucca gloriosa—Adam's needle. A hardy very pretty plant.
Hyacinthus orientalis—Hyacinth. Flowers in Agra in Mr. Boldero's garden.
Allium ascalonicum—Shallot. Much cultivated in gardens.
A. cepa—Onion. Generally cultivated and very fine.
A. porrum.—Leek. This is also common in gardens.
A. sativum—Garlic. Cultivated especially by the natives.
Asphodelus clavatus.—A common weed on sandy ground in the cold weather.
Hemerocallis fulva.—In Rambagh. March.
Asparagus officinalis—Asparagus. Thrives very well in Agra, producing abundantly.
A. racemosus.—A pretty elegant little creeper. In gardens, and wild in Bhurtpore.

PALMÆ.

Borassus flabelliformis.—Often seen about Agra.
Areca catechu—Separie. In the Taj only, and there very small.
Phœnix sylvestris.—Commonly called date. Abundant about Agra.
P. dactylifera.—A few young plants in the Rambagh.
Cocos nucifera—Cocoa-nut. Thrives tolerably well about Agra.

JUNCACEÆ.

Juncus bufonius.—On the banks of the Jumna, where it is often under water.

ALISMACEÆ.

Sagittaria sagittifolia.—In almost every tank.

COMMELYNEÆ.

Commelyna diffusa.—This although a common weed grows in such masses in the neighbourhood of Roobass that it gives a very beautiful appearance to the banks on which it flowers.
Cyanotis axillaris.—The blue and red varieties of this are very common about Roobass.

NAIADEÆ.

Potamogeton crispus.—In tanks not uncommon.
Spathium monostachyum.—In tanks near Dholpoor.

AROIDEÆ.

Pistia Stratiotes—Water soldier. Not uncommon.
Cryptocoryne spiratis—On the borders of standing water, common.
Colocasia antiquorum—Kuchoo. Very generally cultivated.

Colocaria indica—Man-kuchoo. Also cultivated by the natives. One or two other Arums which I am unable to name satisfactorily, grow at Agra.

PANDANEÆ.

Pandanus odoratissimus—Screw pine. In some old gardens at Agra and at Bhurtpore.

ERIOCAULONEÆ.

Eriocaulon hexangalare.—In damp places, very rare about Agra.

CYPERACEÆ.

Dichostylis Micheliana.—According to Royle. I do not know the plant.
Cyperus compressus.—Not uncommon in standing water.
C. hexastachyus.—Very common about Agra.
C. mucronatus.—Also a common coarse looking plant.
C. Ivia.—This is also abundant about Agra.
Kyllingia monocephala.—A small low plant, very common.
Mariscus umbellatus.—In moist places near Agra, grows very high.
M. cyperinus.—This is also often seen.
Isolepis barbata.—Pretty common where water runs.
I. supina.—I have also observed this in similar places.
Scirpus dubius.—This is cultivated about Agra for its Tubers.

GRAMINEÆ.

Lappago racemosa.—A pretty grass, common: flowers in August.
Dactyloctenium Ægyptiacum.—Rather a common grass.
D. verticillatum (*nobis*)—Leptochloa verticillata.—Kunth. A tall handsome grass, certainly out of place in Leptochloa.
Cynodon Dactylon—Doob. This is the commonest and most valuable grass in the upper provinces. It will grow all the year when watered.
Lolium temulentum.—A rare grass in the cold weather.
Aristida hystrix.—On dry sandy soils, not often found.
Polypogon Monspeliensis.—A cold weather grass, pretty common.
Sphorobolus (*Agrostis*).—*Pulchellus.* A pretty delicate grass, very common.
Zea Mays—Indian corn. Now very generally cultivated.
Penicillaria spicata—Bajra. An agricultural plant.
Cenchrus biflorus.—By far too common a grass, as the prickly involucre of the dry seed is as troublesome as the seed of Tribulus lanuginosus..
Poa plumosa.—A very common pretty grass.
P. tenella.—Equally common: this is without the hairs on the corolla of the preceding.
Chloris decora?—A common grass.
Oropetium Thomæa.—A diminutive little grass on the tops of old walls at Futtehpoor Sikri.

Manisuris granularis—A small curious looking grass which I only found on the plains of Roobass.

Perotis latifolia.—A pretty grass tinged with purple in the spike.

Andropogon (Anatherum) muricatus—Khas Khas. Frequently found in the Agra district. Sometimes growing with Bajra.

A. contortus—Spear grass. Rare.

A. polystachyus.—Rather rare, found growing under bushes.

A. pertusus.—A common grass in uncultivated places.

A. Sorghum—Jooar. A common agricultural plant. Suffers less from drought than the Bajra: the locusts attacked it.

Imperita arudinaria.—A very common white flowering grass.

Saccharum officinarum—Sugar Cane. Cultivated, but to no great extent about Agra.

S. Munja.—A large grass very common around Agra.

S. Sara.—This is also abundant about Agra.

Bambusa arundinacea—Bamboo. Some few young plants around Agra planted.

Hordeum Hexastichyum—Country Barley. Very generally cultivated.

H. Huzarah.—Barley. Some grown experimentally.

H. Simlah.—Barley. Grown in the Horticultural Society's Gardens.

Triticum æstivum.—Wheat. Commonly cultivated.

T. hybernum.—Wheat. Also grown.

Avena sativa—Oats. Are now abundantly grown in the North Western Provinces.

A. fatua.—Sometimes found in fields of wheat and barley.

A. sterilis—According to Royle.

There are several more Grasses and Cyperaceæ, but as I have not yet been able to name them to my entire satisfaction, I have omitted them. I have examined the whole of the above in their living state, carefully and microscopically, and think these are all correct, and according to the most recent nomenclature. I have mentioned no Panicum as I think that genus requires a new arrangement altogether.

ACOTYLEDONEÆ.

FILICES.

Asplenium radiatum.—Common in various places about Agra, and at Futtehpore Sikri.

Adiantum sp :—This grows on the sides of the water channels in Rambagh, &c.

EQUISETACEÆ.

Equisetum debile.—On the flooded banks of the Jumna.

MARSILEACEÆ.

Marsilea quadrifolia.—Always found in deposits of water.

MUSCI.

There is one moss very common on the wet sides of the Jumna wells, but I have never observed it in flower.

Appendix to List of Plants

AND

ERRATA.

Page 7,—I mention *Polanisia Bhurtporensis.* A new species which may be described as follows:
P. Bhurtporensis.—MUNRO. Stem thickly covered together with the leaves with prickly hairs: leaves simple! oblong lanceolate, acuminated. The radical leaves attenuated into a petiole, the cauline ones sessile. Stamens 10—12.—Siliqua linear, not compressed, sessile, about the length of the peduncle. Flowers rose coloured and very pretty.

„ 7, Line 18, *Arnotto* is the common name of *Bixa Orellana.*

„ „ „ 27, The full stop is wrongly placed after *Polygala.*

„ „ „ 30, *cruoides,* should be *ericoides.*

„ 8, „ 21, annual should be added after weather.

„ 9.—*Bombaceæ.* To this family I have to add a very interesting tree, which was only pointed out to me lately, by Mr. Jackson, growing in a field near the bridge of boats and about 200 yards from the road, namely, the "Baobob"—*Adansonia digitata.* The tree is nearly 30 feet in circumference round the trunk and is the only surviving one of three which grew near the same spot. The natives only know that it is an exotic, that it produces flowers but no fruit. They also state that it is a very useless tree on account of the great softness of the wood. In Senegal, however, it is highly esteemed, the pounded leaves affording the natives a very valuable tonic and sudorific medicine, the efficacy of which has been tested by many European travellers.

„ 9.—The new species of *Corchorus* may be characterized as follows:
C. humilis.—(MUNRO.) Perennial, prostrate: leaves ovate, crenate with very long petioles: peduncles 2 flowered: capsules linear, oblong, 6—8 times longer than broad, nearly glabrous, 4—5 celled, 4—5 valved. Septa nearly obsolete. This may be *C. prostratus* of Royle, who, however, gives no description.

„ 10, Line 16, *Norysea* should be *Norysca.*

„ 11.—The new species *Erodium Chumbulense* may be described thus:
E. Chumbulense.—(MUNRO.) Annual with a short decumbent stem covered over with glandular hairs: leaves oblong cordate, crenated, on long petioles. Peduncles 1 flowered, thickened towards the top, jointed near the base, and at the joint furnished with two bracteas: sepals pointed, carpels two inches in length with the awns.

„ 13, Line 15, *Burtria* should be *Burhia.*

Page 14, „ 22, *Khardee* is the native name of *Vicia sativa.*

„ 16, „ 34, *Ercobotrya* should be *Eriobotrya.*

„ 19, „ 7, *Stellans* should be *Stellaris.*

„ 20—*Vernonia anthelmintica* should have been added after *V. cinerea* as it is often found wild about Agra.

„ 20.—Last line but one.—*Calendula officinalis* is here misplaced, it belongs to the division *Cynareæ* where it will also be found.

„ 29.—The two species of *Artocarpus* should have been placed under a separate natural order *Artocarpeæ.*

„ 31,—2nd line from the bottom *spiratis* should be *spiralis.*

„ 32,—2nd line, first word should be *Colocasia.*

„ „ line 30, .— is wrongly inserted after *Agrostis.*

„ 33.—The 2nd and 3rd species of Barley are not distinct species, but varieties of Barley, which were sent with the trivial names of Huzarah and Simlah Barley.

Since I wrote the former part of the Catalogue, the following plants have been introduced from the Himalayas and are thriving very well in the Rambagh.—*Acacia sp:—Bauhinia Vahlii—Coriaria Nepalensis—Chamæpuce stricta.—Fragraria indica—Rhus Velutina* and *Scorzonera Roylei.*—The three first are likely to prove of considerable value, and will, in all probability, thrive, as they are all found in the warm valleys of the Himalayas.

PUGILLUS PLANTARUM INDIAE ORIENTALIS.

COMPOSUIT

G. A. WALKER-ARNOTT.

A. C. N. C. S.

Cum tabula una.

(*Academiae exhib. d. X. Februarii a. MDCCCXXXVI.*)

(Acta Acad. Caes. Leop. Carol. Nat. Cur. Vol. XVIII. P. I.)

PUGILLUS PLANTARUM INDIAE ORIENTALIS.

When Dr. Wight and I published the first volume of our Prodromus florae Peninsulae Indiae orientalis, we confined ourselves to those plants which were either natives of the Peninsula, or had been discovered by the Missionaries, but whether in the Peninsula or in Ceylon, was to us somewhat doubtful. The specimens of the latter were usually very imperfect. Of these, however, I have since the publication of that work, seen more complete materials, in a rich collection of plants made in Ceylon within these few years by the exertions of Colonel Walker, secretary to the Governor of that island, and his Lady, and transmitted by them to my friends Dr. Hooker, and Dr. Graham, Professors of Botany, the former at Glasgow, the latter in Edinbourgh.

While examining these I observed many new species which I trust will, ere long, be published by Dr. Hooker in his „Companion to the Botanical Magazine"; but I have in the mean time drawn up the specific characters of a few, most of which are so intimately connected with the Flora of the South of the Peninsula, that I confidently expect that they will be soon found there by my active and persevering friend Dr. Wight. These specific characters, with such observations or corrections upon plants already described, particularly on those in our Prodromus, as may be necessary for their farther elucidation, form the subject of the following memoir.

Arlary (Scotland).

RANUNCULACEAE.

1. *Ranunculus subpinnatus* (W. et A.). In hac specie stylus est brevis, basi rectus, apice uncinatus.
2. *Ranunculus pinnatus* (Poir.). Plantam cum descriptione Poiretiana satis convenientem e Ceylano vidi, at carpellis orbicularibus; vereor itaque, ne R. Wallichianus huius tantum varietas sit. R. Ceylanicus Moon. Cat. Ceyl. pl. p. 43, huc verisimiliter spectat.

DILLENIACEAE.

3. *Acrotrema Wightianum* (Wall.); etiam in montibus Ceylanicis crescit.
4. *Schumacheria castaneaefolia* (Vahl.); nonnulla ad hanc plantam iam adnotavi in opere Iamesonis, „*Edinb. New Philos. Journal*" dicto, t. XVI. p. 315; quibus varietatem α promiscue cum varietate β occurrere addas.

POLYGALEAE.

5. *Polygala hirsutula* (Arn.); suffruticosa diffusa, ramis teretibus hirsuto-pubescentibus, foliis elliptico-ovatis basi apiceque acutis brevissime petiolatis iunioribus utrinque sparsim hirsutis adultis glabrioribus, racemis supra-axillaribus erectis folio triplo longioribus versus apicem paucifloris, bracteolis minutis subpersistentibus, alis foliaceis oblongo-lanceolatis margine membranaceo ciliato, carina conspicue cristata. In Ceylano.
6. *Salomonia oblongifolia* (DeC.). Haec et in montibus Ceylanicis crescit.
7. *Salomonia cordata* (Arn.); caespitosa, foliis sessilibus cordato-ovatis utrinque glabris margine ciliatis, spicis elongatis, capsulis cristato-pectinatis. In montibus Ceylani.

BYTTNERIACEAE.

8. *Kydia angustifolia* (Arn.); foliis anguste oblongo-lanceolatis

acuminatis basi trinerviis, involucello tatraphyllo primo calycem superante. In Ceylano. A *Kydiis calycina* et *fraterna* evidenter differt foliis angustis.

ELAEOCARPEAE.

9. *Elaeocarpus obovatus* (Arn.); arboreus, foliis breviter petiolatis alternis late obovatis crenatis, crenaturis mucrone deciduo apiculatis, nervorum axillis nonnullis glanduliferis ramificationibus eglandulosis, petiolis ad apicem vel folio ad basin seta brevi instructis, racemis folio longioribus simplicibus ex foliorum hornotinorum axillis, staminibus subtriginta, antherarum valvis ebarbulatis. In Ceylano. Inter *Elaeocarpos serratum* et *oblongum* collocandus.

10. *Elaeocarpus subvillosus* (Arn.); arborescens, foliis longiuscule petiolatis late ovalibus obtusis vel breviter acuminulatis crenato-serratis subtus eglandulosis iunioribus supra pubescentibus subtus petiolisque tomentosis adultis utrinque glabrescentibus, racemis tomentosis e foliorum annotinorum delapsorum axillis, floribus breve pedicellatis bracteisque pectinato-ciliatis, antheris 20—25 dense pubescentibus, ovário villoso. In Ceylano. Folia adulta circiter 5 pollices longa et tres pollices lata.

11. *Monocera Ceylanica* (Arn.); arborescens glabra, foliis longiuscule petiolatis late ellipticis breviter acuminatis rariter crenato-serratis subtus eglandulosis, racemis infra folia hornotina ortis patentibus laxifloris, pedicellis elongatis subsecundis cernuis, petalis dorso parce sericeo-pubescentibus, staminibus numerosis filamentis pubescentibus, drupae putamine teretiusculo tuberculato. In montibus Ceylani (vidi solummodo in herb. Grahamii exemplum unicum). Affinis *Mon. petiolari* Jack., seu *Elaeocarpo petiolari* Wall. Cat. n. 2673, at folia breviora, pedicelli longiores et racemi infra folia hornotina, haud ex earum axillis orti.

DIPTEROCARPEAE.

12. *Dipterocarpus laevis* (Ham.). Hanc speciem e Ceylano vidi in herb. Hookeri: est itaque verisimiliter *Dipterocarpus turbinatus* Moon. Cat. Ceyl. pl. p. 42, ubi ad Calturam crescere dicitur.

AURANTIACEAE.

RISSOA (Arn.).

Calyx cupulatus, breviter ac obtuse 4-fidus. *Petala* 4. *Stamina* 8: filamenta plana, linearia, apice subito ac breve acuminata, alterna breviora ac latiora: *Antherae* cordato-ovatae, mucronulo brevi instructae. *Torus* carnosus, cupuliformis circa basin ovarii. *Ovarium* lineari-ovale, obtusum, in stylum subito attenuatum, 2- (seu rarissime, et forsan casu 3-) loculare. *Ovula* duo in quoque loculo, collateralia, ad axin medium affixa. *Stylus* crassiusculus, subelongatus. *Stigma* capitatum, obtusum. Fructus baccatus, subglobosus, 2-spermus. Frutex (seu arbor?) *spinosus*. Folia *simplicia*, *glabra*, *oblongo-lanceolata*. Flores *in corymbos subsessiles*, *vel racemos breves* axillares digesti. Fructus nucis avellanae magnitudine.

Habitus *Atalantiae monophyllae*, at folia maiora, 3—5-pollicaria, 1½—2-poll. lata: habitus etiam quodammodo *Limoniae missionis* Wall.

Genus dicatum cl. RISSOI, qui una cum *Poiteau* monographiam *Citrorum* elaboravit: *Rizoa ovalifolia* Cav. est *Gardoquia multiflora* Ruiz et Pav.

13. *Rissoa Ceylanica* (Arn.). Limonia citrifolia Moon. Cat. Ceyl. pl. p. 34 (non Roxb.). In Ceylano.

ERYTHROXYLEAE.

14. *Sethia acuminata* (Arn.); foliis alternis elliptico-oblongis basi acutis apice subito acuminatis penninerviis subtus pallidioribus,

pedicellis axillaribus petiolos dimidio superantibus solitariis uniforis, calyce 5-fido segmentis ovatis acutis, stylis ad apices fere usque coalitis, stigmatibus globosis. In Ceylano.

MALPIGHIACEAE.

15. *Ancistrocladus Vahlii* (Arn.). Wormia hamata Vahl. in Act. Soc. Hist. Nat. Hafn. t. VI. p. 104. Exempla suppetentia floribus tantum inapertis gaudent, fructuque carent. Aliam speciem, forsan A. Heyneanum, e montibus „Courtallum" Peninsulae nuperrime se accepisse in litteris iam monet amiciss. Wightius. Opusculum supra citatum rarissimum et paucis botanicis visum: en itaque descriptionem Vahlianam. „*Frutex* altissime scandens. *Caulis* erectus, bi-semitripedalis, simplicissimus, annulis protuberantibus notatus, fasciculo foliorum erecto terminatus more *Dracaenae:* foliis confertis, subcuneiformibus. E disco fasciculi foliorum oritur ramus solitarius parum adscendens; primum simplex, dein inter frondes arborum divisus, teres, parum flexuosus, ramulosus: ramuli sparsi, remotiusculi, patentissimi, breves, fasciculo foliorum terminati, extrorsum attenuati, post casum foliorum apice elongati inque hamum revolutum pollicarem subulatum transeuntes. *Folia* circiter tria in apice singuli ramuli, vix petiolata, quadripollicaria, duo minora, lato lanceolata, basi attenuata, integerrima, tenuissime venoso-reticulata, glabra. *Pedunculi* axillares, plures, erectiusculi, subdichotome parum divisi, folio breviores, filiformes, angulati, glabri, rubri. *Flores* racemosi, breviter pedicellati, alterni. *Calyx* monophyllus, 5-fidus: laciniis oblongis obtusis. *Corolla: Petala* 5, calyce duplo longiora, ovata, luteo-albicantia. *Filamenta* 5, erecta, basi annulo carnoso nectarifero cohaerentia, brevia, planiuscula, laevia, rubra. *Antherae* cordatae, corolla

breviores, luteae. *Germen* inferum. *Stylus* globosus vel pyramidalis. *Stigmata* tria, erecta, compressa, apice retusa, antheris parum breviora. *Drupa* turbinata, calyce 5-partito maximo coronata: *laciniis* sesquipollicaribus, duabus minoribus, coriaceis, oblongis, obtusis, obscure nervosis. Habitat in sylvis densissimis cinnamometi prope Bigamen Ceylani insulae.

MILLINGTONIACEAE.

16. *Millingtonia pungens* (Wall.). Huius in Ceylano varietas crescit foliis ovalibus breve acuminatis, attamen, ut in forma descripta, basi acutis.

SAPINDACEAE.

17. *Schmidelia Allophyllus* (DeC.). Huius speciei, Botanicis hodiernis fere penitus ignotae, exemplum unum vidi in Herbario Grahamii, florens at absque fructu. Petala sunt haud aequidistantia, sed omnino ut in aliis *Schmideliae* speciebus; ungues eorum sunt anguste lineares margine albo-villoso; lamina orbicularis basi albo-villosa. Glandulae quatuor inter petala et torum; duae contiguae, maiores, concavae. Filamenta 8 in exemplo suppetente petalis breviora, ovarii longitudine, complanata, basi sensim latiora, parce villosa. Antherae subrotundae. Ovarium primo dense-dein parce hirsutum, didymum, biloculare, ovulis solitariis erectis. Racemi spiciformes, breves (½—¾ poll. longi), vix petiolum superantes. Descriptio Linnaeana, in Flora Ceylanica p. 58 et ad calcem p. 8, caeteroquin bona.

OXALIDEAE.

18. *Oxalis* (Biophytum) *nuda* (Arn.); caule elato (plusquam pedali) hirsuto-pubescente ad apicem solummodo folioso, foliis umbellatis, foliolis 12—20-paribus lineari-oblongis basi oblique truncatis apice longe et oblique mucronatis supra glabriusculis elevato-

venosis subtus glaucis nervis prominulis, pedunculis pluribus folia aequantibus pubescenti-pilosis, floribus paucis umbellatis, pedicellis basi bracteatis, sepalis lanceolato-subulatis longitudinaliter striatis, stylis brevibus crassis apice emarginatis. In adscensu montis „Adams Peak“ Ceylani insulae (vidi ex. un. in herb. Grahamii). Haec et sequens an sint *Oxalidis sensitivae* merae varietates, an species distinctae, diu haesi, neque hodie omnis apud me dubitatio cessit; in permultis enim cum ista conveniunt, at habitus utriusque est maxime diversus.

19. *Oxalis* (Bioph.) *prolifera* (Arn.); prostrata radicans suffruticosa ramosa, ramis hirsuto-pubescentibus, foliis verticillatis et terminalibus umbellatis, foliolis 8—14 paribus oblique oblongis obovatisve basi apiceque oblique truncatis mucronulatis supra hirsutulis subtus glabriusculis, pedunculis pubescentibus inter folia insertis subsolitariis folio brevioribus, pedicellis 2—5 umbellatis basi bracteis lanceolato-subulatis plurimis instructis, sepalis lanceolato-subulatis longitudinaliter striatis hirsutulis, filamentis basi subdiscretis stylisque subpilosis, stylis profunde bifidis. In Ceylano insula.

Zygophylleae.

20. *Fagonia mysorensis* (Roth.). De hac specie nuper ad me amiciss. Wightius scripsit, quae sequuntur: „Fagonia mysorensis apud Bellary est vulgatissima. Planta est valde variabilis, stipulis folia vel superantibus vel brevioribus illis, foliolis 1—3-lineari-lanceolatis. Plantae vetustiores sunt fruticuli ramosissimi spinosique instar ulicis; hoc in statu folia sunt simplicia seu unifoliolata. Plantae iuniores erectae sunt, foliis omnibus trifoliolatis. In statu inter formas illas intermedio folia sunt 1-, 2-, et 3-foliolata, ex eadem radice. Hinc *Fagonias arabicam, mysorensem,* atque *Oliverii* unam eandemque speciem esse suspicor.“

Simarubeae.

21. *Samadera indica* (Gärtn.). Exemplis pluribus Ceylanicis edoctus sum, pedunculos primo semper erectos esse, at sensim postea fieri cernuos; hinc species Vahliana eadem ac nostra est, nec forsan *Niota lucida* Wall. distinguenda.

Ochnaceae.

22. *Ochna Heyneana* (W. et A.), quam etiam e Ceylano vidi, species est ab *Ochna Wightiana* certe distincta.

Celastrinae.

23. *Kurrimia Ceylanica* (Arn.); foliis ovalibus ovatisve, floribus paniculatis. In Ceylano insula. Fructus oviformis, coriaceus, non dehiscens, unilocularis, monospermus. Semen erectum, (imperfectum, at ob chalazam superiorem) radicula infera.

24. *Kurrimia paniculata* (Wall.); foliis oblongo-lanceolatis, floribus paniculatis. *Wall. Cat. n.* 433. Bhesa paniculata *Arn. in Ed. n. Phil. Journ. XVI. p.* 315. In Penang.

Leguminosae.

25. *Sophora heptaphylla* (Lin.); fruticosa, foliolis 7—9-oblongis acuminatis glabris alternis suboppositisve, petiolo pubescenti-velutino, racemis terminalibus laxifloris pubescenti-velutinis, pedicellis patentibus, calyce basi attenuata limbo campanulato 5-dentato, ovario subtriovulato, legumine tenuiter velutino 2—3-spermo inter semina subgloboca constricto apice attenuato. S. heptaphylla Linn. fl. Ceyl. n. 164; sp. pl. p. 533 (excl. synon. omnibus praeter Hermann.). In Ceylani montibus. Stamina vix basi coalita sunt, et una cum petalis ad limbi calycis basin inserta. Etiam *Tephrosia racemosa* et *Ormosia glauca* Wall. ad hoc genus forsan pertinent.

26. *Crotalaria Walkeri* (Arn.); suffruticosa erecta ramosa, ramis

teretibus glabris vel iunioribus minute pubescentibus, stipulis lunatis transversis recurvis, foliis ovalibus basi acuminatis apice acuminatis obtusisve utrinque glabris, racemis terminalibus oppositifoliisque multifloris bracteis subulatis reflexis, pedicellis calyce sublongioribus inter medium et apicem minute bracteolatis, calycis corolla duplo brevioris minute pubescentis laciniis subaequeprofunde fissis, legumine minutissime pubescente breviter stipitato obovato-oblongo calycem 5—6-florum superante. In montibus Ceylani alt. 1000 hexapod. Affinis *Crotalariae Heyneanae*, attamen vix varietas.

27. *Crotalaria bifaria* (Linn.) var? *multiflora;* robustior, pedunculo 4—6 pollices longo apice racemum brevem 3—7-florum ferente, floribus maioribus. In Ceylano alt. 670 hexapod. Praeter has notas non differt a *Crotalaria bifaria* Linn.; varietatem igitur luxuriantem potius quam speciem propriam esse autumo.

28. *Crotalaria evolvuloides* (Wight.). Haec etiam in Ceylano crescit. Legumen est sub-8-spermum, haud, ut in Prodr. fl. Penins. p. 188, errore typographico, 3-spermum.

29. *Crotalaria medicaginea* (Lam). In hac specie pedunculi versus apicem flores 2—5 (haud, ut in Prodr. fl. Penins. p. 192 impressum, duos tantum) ferunt.

30. *Psoralea corylifolia* (Linn.). Roxburghius hanc descripsit foliis rarius trifoliolatis; exempla autem omnia, quae vidi e Peninsula allata, foliolo unico instructa erant, at vero quaedam Ceylanica foliola ternata ostendunt.

31. *Indigofera galegioides* (DeC.?); fruticosa erecta ramosa, ramis teretibus glabris, foliis pinnatis sub-15-foliolatis, foliolis elliptico-obovatis obtusis mucronulatis glabris vel minute pubescentibus, stipulis subulatis subsetiformibus minutis erectiusculis, race-

mis folio longioribus multifloris sessilibus, floribus (parvis) pluribus deciduis, calycis laciniis breviusculis ovatis acuminatis, leguminibus versus basin pedunculi approximatis sutura utraque subcallosa prominula, seminibus cylindraceis basi apiceque truncatis. In Ceylano insula. Affinis Indigoferae Wightii et Indigoferae tinctoriae. In multis convenit cum descriptione, a cl. De Candolle data, at ab *Indigofera cassioide* Rottl., cui in Prodromo regni vegetabilis proxima posita est haec species, omnino aliena: sin nova, *Indigofera fasciculata* appellari posset.

32. *Pueraria* ad Hedysareas certe pertinet (vidi exempl. fructiferum in herb. cl. Hookeri).

33. *Dumasia pubescens* (De C.) in Ceylano crescit. Exempla fructifera genus hocce ad Phaseoleas prope *Cantharospermum* relegandum esse demonstrant.

34. *Glycine mollis* (W. et A.). In exemplis quibusdam Ceylanicis ramuli iuniores foliolis quandoque anguste lanceolatis instructi sunt.

35. *Zornia Walkeri* (Arn.); annua diffusa, foliolis binis ex oblongo-lanceolatis in obovata transeuntibus mucronatis glabris margine costaque subtus parce pilosis subepunctatis, bracteis sagittato-ovatis acutis ciliatis subopace punctatis, legumine bracteas subaequante pubescente reticulato-venoso inermi. In Ceylano. Affinis videtur *Zorniae dyctiocarpae* De C.

36. *Smithia paniculata* (Arn.); caulibus pedunculis pedicellis calyceque (praeterquam ad basin) glandulosis pilosisque, foliolis cuneato-oblongis obtusis retusisve margine setosis caeteroquin glabris, floribus in paniculam terminalem aphyllam laxam digestis, calycis labio superiore lato truncato leviter emarginato inferiore breviter 3-fido, leguminibus sub-4-articulatis parce reticulato-venosis etuberculatis. In Ceylani monte „Neueri-Ellia“ ad sca-

turigines alt. 1000 hexap. Pili calycis et partium plantae iuniorum aurei. Flores flavi: vexillum striatum maculis duabus magnis sanguineis eleganter pictum. Affinis est *Sm. blandae* Wall., at inflorescentia paniculata, floribus minoribus, patriaque differre videtur.

37. *Desmodium Wightii* (Gr.). Varietatem minus diffusam e Ceylano vidi allatam, ramis racemis foliisque iunioribus plus minusve hirsutis, leguminibus subpubescentibus.

38. *Desmodium Walkeri* (Arn.); erectum strictum rigidum basi lignescens, ramis ramulisque teretibus incano-pubescentibus, foliis brevissime petiolatis trifoliolatis, foliolis ellipticis vel oblongo-lanceolatis obtusiusculis supra glabris subtus cano-pubescentibus subglaucisque, stipulis lanceolato-subulatis, racemis elongatis multifloris subterminalibus in paniculam strictiusculam digestis tomentoso-pubescentibus, bracteis lanceolato-subulatis ternis, pedicellis breviusculis ternis patulis, leguminibus pubescentibus 3—5-spermis, articulis subsemicircularibus. In Ceylano. Quod ad fructum et bracteas affine est Desmodio Wightii, at multis differt.

39. *Desmodium cateniferum* (Arn.); fruticosum, ramis patulis teretiusculis iunioribus angulatis glabris vel minute pubescentibus, foliis petiolatis trifoliolatis foliolis oblongo-lanceolatis acuminatis supra glabris reticulatim venosis subtus minute pubescentibus, stipulis lanceolato-subulatis, racemis pubescentibus terminalibus subramosisque vel subterminalibus simplicibusque, bracteis anguste lanceolatis subulatisque, pedicellis 2—3-nis patentibus apice incurvis cum floribus resupinatis, leguminibus elongatis linearibus pilis brevibus uncinatis dense tectis utrinque ad genicula paullum constrictis, articulis anguste ovalibus basi apiceque truncatis latitudine 3—4-plo longioribus. In Ceylani montibus alt. 1000

hexap. *Desmodio recurvato* affinius quam ulli alii specierum, quas adhuc vidi, sed ab ista quoque multum differt.

40. *Desmodium podocarpum* (Wall.); crescit in Ceylano.

41. *Taverniera cuneifolia* (Arn.); foliis 1-foliolatis petiolatis superioribus abortivis, foliolo cuneato-obovato recurvo-mucronulato crassiusculo glabro vel pubescente, pedunculis ex stipularum aphyllarum axillis brevibus versus apicem flores 1—4 brevissime pedicellatos ferentibus, leguminis articulo inferiore abortivo stipitiformi superiore inaequaliter subovali setis rigidis apice hamosis echinato. Hedysarum cuneifolium *Roth. nov. pl. sp. p.* 357. Onobrychis cuneifolia *De C. prodr. II. p.* 348. In Mysore legerunt Heyne et Campbell. Minime est, ut in Prodromo fl. Penins. I. p. 198 dubie indicatum est, *Indigoferae* species. At necesse erit characterem generis, a cl. Candollio datum, sequentem in modum mutare.

Taverniera DC.

„*Calyx* basi bibracteolatus, 5-fidus, subbilabiatus, laciniis lanceolato-linearibus acuminatis. *Corolla* papilionacea: vexillo subobovato;“ alis parvis petalis caeteris subduplo brevioribus; „carina obtusa“ vel oblique truncata. „*Stamina* 10 diadelpha (9 et 1) recta“ aut inflexa. „*Stylus* filiformis longus flexuosus deciduus.“ *Ovarium* 2-ovulatum. „*Legumen* plano-compressum ex articulis duobus monospermis constans,“ articulo inferiore quandoque abortivo stipitiformi, fertilibus ovalibus orbicularibusve (semper?) aculeatis seu setosis, sutura utraque convexa. „Suffrutices *orientales vel Indici.* Folia 1—3-*foliolata.* Stipulae *inter se basi connatae.* Flores *rosei aut albi,*“ *demum scariosi et subpersistentes.*

42. *Lespedeza? indica* (Spr.). Flemingia Rothiana *De C.* Hallia trifoliata *Roth.* Haec planta, ut nunc certior factus sum, ad ho-

rum generum trium nullum revera pertinet; est enim *Rhynchosia rufescens* DeC., de cuius reliquis synonymis conferas Wight et Arn. Prodr. fl. Pen. I. p.239. Etiam in Ceylano crescit.

43. *Alysicarpus bupleurifolius* (DeC.). Huius varietatem ex ora Malabarica, apud Cannanore a D. Campbell lectam, nuperius accepi foliis multo latioribus et brevioribus, inferioribus ovalibus.

44. *Dunbaria oblonga* (Arn.); foliolis utrinque pubescentibus terminali oblongo acuminato, petiolis nervisque subtus fulvo-subtomentosis, calyce fulvo-sericeo, lacinia suprema lateralibus longitudine latitudineque subaequali, corollae alarum calcare parvo lato obtusiusculo, leguminibus 4—5-spermis. In Ceylano.

45. *Acacia Catechu* (Willd.). Huius varietatem luxuriantem, vel forsan speciem propriam, in Ceylano lectam, in herb. Hookeri vidi, glandulis solitariis inter omnes foliorum pinnas praeter paucas medias et quandoque geminis inter extremas praeditam.

46. *Acacia Roxburghii* (W. et A.). Hanc in Prodr. fl. Penins. descripsimus ad exemplum in herb. Banksiano asservatum; varietatem tantum esse nunc puto plantam, quam in schedulis quondam sic appellavi atque descripsi: *Acacia Campbellii*, fruticosa spinosa, foliis bipinnatis, pinnis 5—6 paribus approximatis glandula concava inter par extremum, foliolis 8—10 paribus minutis arcte imbricatis crassiusculis oblongis acutis mucronulatis pilis brevibus parce tectis, petiolis teretibus hirsutis, spinis axillaribus folia superantibus basi connatis longe subulatis teretibus, pedunculis axillaribus 1—3-nis spinis brevioribus bracteolis duabus persistentibus infra medium instructis, capitulis globosis, corolla 5-fida, staminibus numerosis discretis, leguminibus linearibus tenuibus contortim flexuosis. In Mysore; *Campbell.* Ab A. Roxburghii vera praecipue differt foliis haud glabris, ramisque iunioribus saepissime hirsutis.

Rosaceae.

47. *Agrimonia Eupatorium* (Linn.). Agr. ceylanica Moon. Cat. Ceyl. pl. p. 37. In Ceylani montibus alt. 1000 hexapod. Nullomodo ut speciem vel varietatem propriam distinguere possum hanc plantam Ceylanicam a forma communi in Europa vulgatissima.
48. *Alchemilla vulgaris* (Linn.). Ante Prodromi fl. Penins. evulgationem hanc speciem e Neelgherry recepi; at minime indigenam credens, illam praetermisi. Nunc tamen in montibus Ceylani alt. 1000 hexapod. lectam vidi: hinc montibus Indiae australioris et Ceylani altis indigenam esse persuademur. Nec vero in Nepalia, neque in aliis Indiae septentrionalis montibus crescere videtur, et cl. Wallichius in catalogo suo generis haud meminit.
49. *Rubus leucocarpus* (Arn.); caulibus glaucis glabris aculeis recurvis armatis, ramulis iunioribus petiolisque aculeatis tomentoso-pubescentibus, foliis pinnatis, foliolis 5—7 subplicatis ovatis acuminatis terminali latiore supra pubescentibus subtus concoloribus inter nervos pubescentes pilososve glabris margine inaequaliter dentato-serratis, stipulis subulatis tomentosis, floribus axillaribus subbinis vel in coryinbum terminalem digestis, laciniis calycinis triangulari-ovatis apice subulatis pedicellis carpellisque breviter tomentosis. In Ceylano alt. 1000 hexapod. Valde affinis *Rubo lasiocarpo* Sm., at folia subtus minime albo-tomentosa.
50. *Fragariae vescae* (Lin.?) e Ceylano alt. 1000 hexap. lecta exempla perpauca vidi male asservata. In Catalogo Moonii autem hanc speciem e Britannia introductam esse, nescio an recte, affirmatur.

Rhizophoreae.

51. *Carallia ceylanica* (Arn.); foliis cuneato-obovatis obtusis integerrimis, petalis sub-7 margine undulatis lobos calycis triangulari-lanceolatos aequantibus, stigmate 3—5-fido segmentis

emarginatis. In Ceylano. Ovarium 1-loculare, ovulis duplo pluribus quam stigmatis lobis primariis. Flores ad apices ramificationum inflorescentiae sessiles capitati, gummi obliniti.

52. *Carallia sinensis* (Arn.); foliis cuneato-obovatis breviter ac obtuse acuminatis integerrimis subtus (an casu?) nigro-punctatis, petalis sub-7 orbiculatis apiculatis margine crispulis laceratisque calycis lacinias triangulari-lanceolatas aequantibus, stigmate convexo 4—5-lobo lobis emarginatis. Diatoma brachiata Lour. Petalotoma brachiata DeC. Prodr. III. p.295. Ad Canton sinarum crescit. Caralliae ceylanicae valde affinis, at foliorum petalorumque forma atque patria differt. Inflorescentia eadem, eadem est ovarii structura, hinc in genere toto ovarium uniloculare 6—10-ovulatum esse nunc autumo.

Myrtaceae.

53. *Syzygium rotundifolium* (Arn.); fruticosum, foliis approximatis brevissime petiolatis orbicularibus subretusis coriaceis subepunctatis superne lucidis aveniis subtus penninerviis, cymis terminalibus sessilibus capituliformibus paucifloris, calyce obovato breviter 5-dentato. In Ceylani montibus alt. 1000 hexap.

54. *Syzygium Neesianum* (Arn.); foliis subsessilibus oblongo-lanceolatis apice obtusis planis subcoriaceis punctatis penninerviis, cymis terminalibus corymbosis trichotomis laxis, pedunculis compresso-tetragonis partialibus umbellulam 3—7-floram ferentibus, pedicellis calyce breviter turbinato leviter 4-lobo duplo brevioribus. In Ceylano. Differt a *Syzygiis Iambolano, caryophyllaeo,* et reliquis affinibus omnibus foliis subsessilibus.

55. *Eugenia? capitellata* (Arn.); fruticosa dichotoma ramosa glabra, foliis subdistichis brevissime petiolatis ovatis vel ovato-oblongis longe attenuatis basi trinerviis obscure pellucido-punctulatis,

pedunculis axillaribus gracilibus folio subdimidio brevioribus apice flores tres sessiles (minutos) ferentibus. In Ceylano. Foliorum axillae setis pluribus atrofuscis brevibus instructae sunt. Calyx 5-fidus, cum ovario haud semilineam excedens, basi bracteolis binis suffultus: lobi ovales, obtusi. Stylus filiformis, lineam longus: stigma simplex. Folia revera sunt penninervia ut in Myrtaceis aliis, at nervi ita immersi sunt, ut visu difficillimi; nervuli autem margini paralleli, in quos nervi divergentes conflantur, conspicui sunt: hinc folia ad speciem trinervia.

56. *Eugenia ceylanica* Willdenovii, quam veram nunc ante oculos habeo in Ceylano etiam provenientem, differt ab *Eugenia bracteata* habitu at vix charactere. Folia sunt maiora, 3—4-pollices longa, elliptico-oblonga, basi in petiolum angustata, apice acuminata, acumine obtuso; sunt porro multo magis coriacea, punctulis pellucidis minutis et fere inconspicuis attamen haud omnino obsoletis. Pedicelli raro ex axillis revera oriuntur, sed saepius duo vel quatuor ramulis brevibus ferrugineo-pubescentibus axillaribus opposite sunt inserti et ad insertiones bractea lineari brevi instructi. In utraque specie folia adulta glabra, inflorescentia ferrugineo-pubescens, eadem calycis bracteolarum petalorum stylique forma. An sint species diversae, an eiusdem speciei varietates, aliis diiudicandum relinquo.

HALORAGEAE.

57. *Serpicula hirsuta* (W. et A.). Huius varietatem, vel forsan speciem distinctam, in Ceylano lectam vidi pedicellis folio brevioribus, caeteroquin cum varietate *α* (Prodr. fl. Penins. I. O. p. 338) omnino congruentem.

58. *Haloragis oligantha* (W. et A.) suffruticosa est, ut ex specimine Ceylanico melius edoctus sum.

CUCURBITACEAE.

59. *Bryonia deltoidea* (Arn.); caulibus gracilibus glabris striatis, cirrhis simplicibus, foliis petiolatis deltoideis acuminatis paucidentatis glabris supra calloso-scabris subtus laevibus, floribus masculis axillaribus subbinis vel in racemum brevem in ramulo brevi digestis (fem. ignota). In Ceylano insula.

CACTEAE.

60. *Rhipsalis cassytha* (Gärtn.). Cactus pendulus Moon. Cat. Ceyl. pl. p. 38. Exempla Ceylanica fructum 30—40-spermum gerunt, seminibus nigris nitidis.

UMBELLIFERAE.

61. *Hydrocotyle nepalensis* (Hook.) in Ceylani montibus etiam crescit; huc forsan trahi debet *Hydrocotyle capitata* Moon. Cat. Ceyl. pl. p. 22 (non Du Pet. Th.).

62. *Helosciadium Heyneanum* (De C.). Huc referri debet *Sium triternatum* Moon. Cat. Ceyl. pl. p. 22.

63. *Heracleum nepalense* (Don.) forsan in monte Adams Peak Ceylani crescit, at exempla suppetentia haud ita sunt conservata, ut speciem certo indicare audeam; est *Sium lobatum* Moon. Cat. Ceyl. pl. p. 22.

ARALIACEAE.

64. *Panax Heyneana* (Wall.); „fruticosa inermis, foliis simplicibus integris latis orbiculari-cordatis petiolatis integerrimis coriaceis glabris, paniculae ramis racemosis, umbellulis paucifloris.“ *G. Don.* In Peninsula; *Heyne.*

65. *Hedera ovata* (Wall.); „inermis, foliis simplicibus integris ovato-ellipticis integerrimis coriaceis obtuse acuminatis subtus ferrugineis, pedunculis axillaribus solitariis terminalibusque umbellatis, umbellulis multifloris.“ *G. Don.* In Peninsula.

66. *Paratropia terebinthacea* (Arn.); arborea glabra, foliis digitatis, foliolis 5—7 (in exemplo suppetente 6) longiuscule petiolatis ovalibus obtusis retusisve integerrimis coriaceis prominule venosis, thyrsis alternis in ramulis iunioribus ramos terminantibus aphyllis, bracteis nullis (vel potius caducis?), floribus pedicellatis 4—7 umbellatis, petalis staminibusque 6—8 (saepius 8). Hedera terebinthacea *Vahl. symb. 3. p. 42?* Heptapleurum stellatum Gärtn.? In Ceylano insula. De sua planta haec monuit Vahlius: „Stylus unicus longitudine filamentorum, attenuatus;“ in nostra stigmata 6—8 sessilia in disco epigyno fere immersa, ut in genere *Paratropia:* hinc dubitanter Vahlium citavi, licet in reliquis omnibus descriptio bene quadret.

Loranthaceae.

67. *Loranthus tomentosus* (Heyne). Huius varietatem (*β; hirtifloram)* vidi e Ceylano, insignem corolla pilis longis patentibus ferrugineis hirto-villosa.

Rubiaceae.

68. *Nauclea Missionis* (Wall.); „foliis lanceolatis glabris, pedunculis terminalibus solitariis basi bracteatis, stipulis lanceolatis acutis, capsulis inter se liberis.“ *G. Don. Naucleae parvifoliae* affinis videtur.

69. *Uncaria Gambier* (Roxb.); etiam in Ceylano crescit.

70. *Ophiorrhiza Harrisiana* (Heyne); caulibus petiolis pedunculis nervisque foliorum subtus pubescentibus, foliis ovatis vel rotundato-ovatis acutiusculis supra glabris et viridibus subtus pallidis, corymbis terminalibus pedunculatis dichotomis. Radix valde repens.“ *G. Don.*

71. *Ophiorrhiza pectinata* (Arn.); caule basi lignescente, foliis omnibus versus ramorum apices approximatis 6—8 ovali-lanceo-

latis basi apiceque breviter acuminatis glabris tenuibus, stipulis lanceolato-subulatis, cyma pedunculata terminali corymbiformi compacta, ramis brevibus submultifloris, floribus approximatis, bracteis oblongo-linearibus ad pedunculorum partialium pedicellorumque basin sitis fructum subaequantibus. In Ceylano.

72. *Hedyotis Lessertiana* (Arn.); fruticosa glabra, ramulis compressiusculis, foliis oblongo-lanceolatis acuminatis petiolatis rigidis nervis pluribus simplicibus subtus prominulis, stipulis marcescentibus inferioribus vaginantibus tubulosis truncatis setis paucis apice latioribus coronatis supremis scariosis triangularibus, panicula corymbiformi pedunculis primariis elongatis propriis brevibus, pedicellis calyce brevioribus, calycis limbo cupulato 4-dentato, corolla extus subpuberula in fauce et secus lacinias villoso-barbata, capsula oblongo-obovata dicocca. In Ceylano alt. 1000 hexap. Affinis habitu *Hedyoti fruticosae*, at calyce et fructu *Hedyotis stylosae*. Stamina in quibusdam exemplis exserta cum stylo incluso, in aliis inclusa cum stylo exserto. Hanc duplicem structuram, in Rubiaceis prius a cl. D. Donio cum de *Lucilia gratissima* verba faceret adnotatam, ignorabat cl. Richardius, de *Knoxia* praedicans: „le genre est bien nettement caractérisé par ses étamines sessiles et incluses.“ (Mém. de la Soc. d'Hist. nat. V. p. 153.)

73. *Hedyotis Walkeri* (Arn.); ramis compressis pubescentibus vel breviter villosis, foliis breviter petiolatis ovato-lanceolatis acuminatis basi acutis supra glabris subtus pubescentibus ad nervos venasque hirsutis, floribus axillaribus dense capitatis, capitulis globosis sessilibus petiolo subdimidio brevioribus. In Ceylano. Admodum est affinis *Hedyoti macrophyllae* Wall., et forsan haec eadem est, quam cl. Wallichius ex herbario Madrasp. obtinuit.

74. *Hedyotis nodulosa* (Arn.); fruticosa, ramulis subcompressis hirsutis, foliis breve petiolatis oblongo-lanceolatis apice attenuatis basi acuminatis supra parce hispidis subtus ad nervos adpresse hirsutis caeteroquin glabriusculis, floribus dense capitatis subverticillatis, capitulis axillaribus sessilibus petiolum superantibus, corolla infundibuliformi ore dense barbato, fructu turbinato calycinis laciniis lanceolato-subulatis patentibus coronato dicocco hispido. In Ceylano. Affinis quoad fructum *Hedyoti macrophyllae*, at habitu fere omnino *Hedyotis ulmifoliae*.

75. *Hedyotis plantaginifolia* (Arn.); caespitosa, radice crassa, caulibus brevibus scapiformibus ramosis, foliis radicalibus magnis lineari-lanceolatis acuminatis basi semiamplectentibus glaberrimis 5—7-nervibus, caulinis paucis ad pedunculorum bases tantummodo sitis linearibus, floribus capitatis terminalibus verticillatisque, calycis limbo 5-partito laciniis lanceolatis carinatis tubo corollae longioribus, corolla in fauce et secus lacinias copiose albobarbata. In Ceylano. Ad sectionem nostram *Diplophragme* et § 3 pertinet. Caulem quem supra diximus, rectius fors scapus est appellandus, et caulis verus brevissimus caudiciformis. Planta valde singularis, adspectu quodam monstruoso. Stamina in exemplis nostris exserta.

76. *Hedyotis Richardiana* (Arn.); herbacea diffusa basi vel infra genicula radicans, caulibus elongatis glabriusculis, foliis ovatis (pollicaribus) subacuminatis acutis petiolatis supra parce hispidis subtus pallidis ad nervos hirsutulis caeteroquin glabriusculis, stipularum setis utrinque 3—5 vaginam suam aequantibus petiolis 2—4-plo brevioribus, corymbo thyrsiformi elongato laxo glabro, laciniis calycinis acuminatis, corollae infundibuliformis extus glabrae tubo calycis limbum duplo superante, capsula compressa obovata disperma, seminibus tereti-oblongis. In Ceylano. Affinis

habitu *Hedyoti Leschenaultianae* W. et A., at charactere fere *Hedyotis monospermae.*

77. *Hedyotis nummularia* (Arn.); herbacea diffusa, caulibus hirsutis elongatis, foliis subsessilibus late ovatis obtusiusculis basi rotundatis (4—7-linearibus) utrinque pilis articulatis hirsutulis, stipularum setis brevibus inconspicuis, corymbis terminalibus pedunculatis, floribus subcapitatis, calycis laciniis lanceolatis corolla tubulosa puberula dimidio brevioribus. In Ceylano. Capsula ignota. Affinis *Hedyoti Leschenaultianae,* a qua, inter alia, setis stipularum brevissimis differt.

78. *Hedyotis nummulariformis* (Arn.); herbacea diffusa radicans, caulibus elongatis glaberrimis vel utrinque lineâ obscura pubescente notatis, foliis orbiculari-ovatis glaberrimis brevissime petiolatis, stipularum setis brevissimis subinconspicuis, floribus subcapitatis, capitulis pedunculatis, pedunculis terminalibus ternis, calycis laciniis lanceolatis corollae infundibuliformis tubo puberulo triplo brevioribus. In Ceylano. Ab *Hedyoti nummularia* differt praecipue glabritie, attamen vix est varietas existimanda.

79. *Hedyotis Neesiana* (Arn.); diffusa, ramis simplicibus elongatis inferne teretiusculis sulcatis superne tetragonis glabris ad angulos scabriusculis, foliis ovato-oblongis acuminatis basi obtusis subsessilibus supra nitidis minutissime calloso-punctatis versus margines subtusque ad costam scabris, stipularum setis utrinque 4—6 hispidis rigidis, floribus axillaribus sessilibus, fructu ovato glabro setas stipulares aequante calycis laciniis oblongis obtusiusculis conniventibus margine ciliato-scabris coronato. In Ceylano. Valde affinis *Hedyoti nitidae*, at folia neutiquam basi acuminata.

80. *Hedyotis tubularis* (Br.); „glabra erecta, foliis ovatis acutis, pe-

dunculis terminalibus axillaribusque umbellatis capitatisve, floribus congestis subsessilibus, corollae tubo longo gracili. Annua, ¼—½-pedalis.“ *G. Don.* (sub *Oldenlandia*), qui huc ducit *Hedyotin tubularem* Br. et *Hedyotin minimam* Heyne.

81. *Hedyotis mysorensis* (Heyne); „pubescens, caulibus tetragonis, foliis ovatis acutis ciliatis subtus ad nervos venasque et in petiolis ferrugineo-pubescentibus, pedunculis terminalibus axillaribusque racemosis ramosis, floribus subsessilibus. Annua, pedalis.“ *G. Don.* (sub *Oldenlandia*).

82. *Hedyotis puberula* (Br.); „undique pubescens, foliis linearilanceolatis mucronatis, pedunculis axillaribus vel e caulis dichotomiis, floribus umbellatis umbellis solitariis vel ternis tumque pedunculatis cum foliis binis ad basin pedunculorum. Annua, semipedalis.“ *G. Don.* (sub *Oldenlandia*). Haec atque species duae praecedentes mihi adhuc obscurae.

83. *Canthium lanceolatum* (Arn.); fruticosum inerme glaberrimum, foliis oblongo-lanceolatis obtuse acuminatis basi in petiolum longe attenuatis coriaceis supra nitidis subtus opacis, cymis axillaribus breviter pedunculatis folio multo brevioribus, calycis limbo minute 5-dentato, corollae tubo intus pilis retroversis scariosis vestito, staminibus 5, stigmate longe exserto globoso-mitriformi apice obscure bilobo, drupa compressa late obovata apice emarginata rugosa subtuberculata utrinque sulco notata. Webera lanceolata Moon. Cat. Ceyl. pl. p. 19. In Ceylano alt. 270 hexapod. Varietas *Canthii didymi* Gärtn. nisi ipsissimum illud. Diagnosis utrique omnino convenit praeter foliorum formam. Fatendum autem, me nunquam hanc varietatem e Peninsula Indiae provenientem vidisse, cum tamen varietates ambae in Prodr. fl. Penins. I. O. I. p. 425 descriptae ibi satis vulgares sint, quibus solummodo commotus, ut speciem propriam recensui.

84. *Ixora alba* (Linn.?); fruticosa (vel arborea?) glaberrima, foliis breve petiolatis patulis anguste cuneatim lanceolatis acutissimis, corymbis contractis multifloris breviter pedunculatis basi foliis binis subcordato-ovatis sessilibus acutis suffultis, floribus (albis) approximatis sessilibus, calycis dentibus triangulari-acuminatis tubo brevioribus, corollae tubo elongato (1½—2-pollicari) segmentis ovalibus acutis, stylo glabro exserto stigmatis segmentis linearibus. In Ceylano insula. Exempla, quae vidi, nec cum figura Plukenetiana nec cum Rheediana congruunt; at habitu multo magis affinia sunt *Ixorae coccineae*, quacum Linnaeus plantam in herb. Hermanni asservatam comparat.
85. *Ixora elongata* (Heyne); „foliis petiolatis late ovatis basi valde attenuatis glabris, floralibus ovatis sessilibus basi cordatis amplectentibusque, pedunculis terminalibus trichotome corymbosis, corymbis pilosis, corollae tubo glabro segmentis acutis extus praecipue in alabastro pubescentibus, stigmate exserto. Flores apparent coccinei.“ *G. Don.*
86. *Pavetta Brunonis* (Wall.); „undique molliter villosa, foliis obovatis, stipulis bracteisque latis membranaceis, pedunculis trichotomis ramis densis corymbosis, calycis lobis subulatis. Folia adulta glabrescunt.“ *G. Don.*, qui huc trahit *Pavettam Brunonis* atque *Pavettam mollem* Wall.
87. *Pavetta indica* (Linn.). Huius varietatem nuperius e Peninsula accepi foliis subtus tomentosis latioribusque quam in formis descriptis.
88. *Grumilea nigra* (Gärtn.?); erecta, foliis breviuscule petiolatis oblongis vel oblongo-lanceolatis basi apiceque acuminatis, stipulis subdeltoideis obtusiusculis deciduis, corymbis compactis pedunculatis, calycis limbo obtuse 5-lobo corolla paullo breviore, bacca ovoidea laevi. In Ceylano alt. 1000 hexapod. *Grumi-*

leae congestae valde affinis, at differt inflorescentia semper pedunculata.

89. *Knoxia hirsuta* (Arn.); fruticosa ramosa, ramis ramulisque teretiusculis hirsuto-subvillosis, foliis oblongis supra glabriusculis subtus praecipue ad nervos hirsuto-pilosis, stipulis in setas plurimas longiusculas fimbriatim dissolutis, cymis dense capituliformibus subsessilibus vel pedunculatis, corollae infundibuliformis ore dense barbato extus tubo parce limbo dense villosis, fructu compresso-orbiculari piloso coccis a basi ad apicem disiunctis. *α*. Foliis 6—9 lin. longis supra minute hispidis. *β*. Foliis 1—2-pollicaribus supra ad nervos subhirsutis caeteroquin glaberrimis. In Ceylano; *α*, alt. 1000 hexap. Calycis fructus dens unicus lanceolatus foliaceus, caeteri minuti.

90. *Knoxia platycarpa* (Arn.); fruticosa ramosa, ramis teretibus glabris, ramulis teretiusculis utrinque linea pilosa notatis caeteroquin glaberrimis, foliis oblongo-lanceolatis utrinque glaberrimis margine minute ciliatis, stipulis paucisetosis, cymis contractis subumbelliformibus pedunculatis, corolla infundibuliformi extus glaberrima intus in ore barbata, fructu compresso deltoideo-ovato, coccis a basi ad apicem solubilibus, calycis fructus dente unico foliaceo lanceolato caeteris minutis. In Ceylano alt. 500—700 hexap. *Knoxiae ceylanicae* etiam dens est unicus calycis in fructu grandefactus, quapropter forsan *Knoxia stricta* Gärtn. diversam exhibet speciem.

Dipsaceae.

91. *Dipsacus Walkeri* (Arn.); caule aculeato et versus apicem etiam hirsuto, foliis pinnatifidis utrinque molliter pubescentibus, segmentis oblongo-ellipticis obtusiusculis obtuse serratis terminali lanceolato, involucri foliolis patentibus capitulo globoso multo brevioribus, paleis ovatis mucronulatis ciliatis corolla brevioribus.

In Ceylani montibus alt. 1000 hexap. Inter *Dipsacos asperum* et *Leschenaultii* collocandus.

Compositae.

92. *Vernonia Wightiana* (Arn.); fruticosa, caule tereti tomentoso, foliis ellipticis obtusis in petiolum angustatis supra parce villoso-pubescentibus subtus albido-tomentosis repando-dentatis dentibus apiculatis, corymbo terminali nudo denso, capitulis pedunculatis multifloris, pedunculis squamatis, involucro hemisphaerico tomentoso foliolis lanceolatis acuminatis, achaenio glabro subcompresso inaequaliter quadriquetro basi paullum attenuato, pappo exteriore brevi subpaleaceo. In Ceylano. Affinis *Vernoniae ceylanicae* Less., at folia basi exappendiculata.

93. *Vernonia pectiniformis* (DeC.). Huius varietatem (nisi species sit propria) vidi in Ceylani insulae montibus alt. 1000 hexap. lectam, cui involucrum est hemisphaericum foliolis ovalibus minute pubescentibus. Forsan ad *Vernoniam pectinatam* DeC. pertinent haec specimina, at mihi adhuc ignota est ista species.

94. *Vernonia setigera* (Arn.); suffruticosa?, ramis teretibus villoso-pubescentibus, foliis ovatis longiuscule petiolatis acuminatis serratis supra hirsutulis subtus pallidis subvilloso-pubescentibus, corymbo polycephalo nudo composito, involucri turbinati foliolis dorso parce pilosis lanceolato-linearibus in setam innocuam longe acuminatis interioribus apice serrato-ciliatis, achaeniis glabriusculis, pappi serie exteriori brevissima. In Ceylano. Valde affinis *Vernoniae conyzoidi* DeC., at involucrum turbinatum seu potius obconicum foliolis parce pilosis longiuscule setigeris; in *Vernonia conyzoide* involucrum cupulatum est basi obtusum et cano-pubescens foliolis seu squamis sensim acuminatis, et achaenium cano-pubescens.

95. *Vernonia Candolleana* (Wight et Arn.); fruticosa, ramis villoso-pubescentibus teretibus, foliis oblongo-lanceolatis subacuminatis basi in petiolum brevem villosum attenuatis supra hispidulis subtus plus minusve pubescentibus serratis, serraturis mucronatis, corymbo polycephalo nudo composito, involucri cupulati foliolis oblongis subpungenti-mucronatis versus apices hirsuto-pubescentibus, achaenio glabriusculo, pappo exteriori brevi paleaceo. *Wight Cat. n.* 1509. In montibus Dindygul Peninsulae. A *Vernonia conyzoide* differt foliorum forma et pappo. *Vernoniae setigera, Candolleana* et *conyzoides* ad § 5. VII. Lessingii in Linnaea VI. p. 671 pertinent.

96. *Vernonia Hookeriana* (Arn.); caule herbaceo brevissime pubescente erecto ramoso striato, foliis ovato- vel oblongo-lanceolatis acuminatis basi in petiolum longiusculum attenuatis supra glabris subtus pallidis pubescentibus serratis, serraturis mucronatis, corymbo composito laxo polycephalo nudo, pedicellis gracilibus, involucri hemisphaerici foliolis lineari-oblongis obtusiusculis cum mucronulo brevissimo pubescenti-villosis, achaenio glabriusculo, pappo exteriore brevissimo. In Ceylani montibus alt. 1000 hexapod. Valde et haecce affinis *Vernoniae conyzoidi*, a qua praecipue differt involucri foliolorum forma.

97. *Vernonia scariosa* (Arn.); fruticosa, ramis pilis purpureis patentibus hirsutis subangulatis, foliis ovatis acuminatis grosse mucronato-serratis basi integerrimis et in petiolum brevem hirsutum longe attenuatis supra hispidis subtus pallidis et hirsuto-pubescentibus, corymbo oligocephalo nudo, capitulis sessilibus, involucri oblongi purpurascentis foliolis obtusis subpungenti-mucronatis inferioribus membranaceis oblongo-ovatis superioribus scariosis lineari-oblongis, achaenio 10-costato basi attenuato, pappo exteriore interiori duplo breviore latioreque. In Ceylano. Ha-

bitus et pappus *Vernoniae*, at achaenia *Decaneuri*. Ad eandem sectionem Vernoniae cum tribus antecedentibus trahenda.

98. *Adenostemma angustifolium* (Arn.); glabrum, caule erecto subtetragono simpliciusculo, foliis petiolatis lineari-lanceolatis utrinque attenuatis a medio ad apicem pauci-dentato-serratis basi integerrimis subtrinerviis, panicula laxa oligocephala, involucri foliolis lineari-oblongis obtusis laevibus glabris, achaeniis (immaturis) obscure glanduloso-tuberculatis. In Ceylano.

99. *Solidago ceylanica* (Arn.); fruticosa ramosa, ramulis dense cano-pubescentibus, foliis petiolatis oblongo-lanceolatis basi apiceque attenuatis sursum denticulato-serratis utrinque subhirsuto-pubescentibus, paniculis corymbosis terminalibus polycephalis, capitulis undique versis, involucri foliolis anguste oblongis intimis glabriusculis exteriores dense pubescentes subduplo superantibus, ligulis numerosis anguste-oblongis patulis, achaenio hirsutulo. In Ceylani montibus alt. 1000 hexap. Capitula parva. Pappi pili numerosi aequales vel saepius inaequales, quibusdam quam caeteris brevioribus ac tenuioribus.

100. *Blumea Wightiana* (DeC.); caule herbaceo erecto tereti striato plus minusve puberulo vel villoso-pubescente, foliis inferioribus petiolatis ovalibus obtusiusculis basi cuneatis, superioribus cuneatis ovali-oblongis acutis omnibus inaequaliter acute serrato-dentatis utrinque ac praecipue subtus pubescentibus vel pubescenti-villosis, capitulis in paniculam thyrsumve terminalem digestis, involucri foliolis linearibus acuminatis exterioribus plus minusve villosis intimis glabrioribus disco paullo longioribus, corollis masculis 8—12 extus tuberculoso-glandulosis. α, *glabrior*. *Blumea Wightiana* De C. in Wight. Contrib. p. 14; Wight. Cat. n. 1427. In Peninsulae Ind. or. variis locis. β, *villosior*. In Ceylano. Varietas β multo magis villosa quam α, praecipue

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quod ad involucra, at vix aliter differt; diagnosin Candolleanam itaque in paucis reformavi.

101. *Blumea crinita* (Arn.); caule herbaceo erecto tereti (simplici?) hirsuto-villoso, foliis rigidis inaequaliter acute serrato-dentatis utrinque hirtis inferioribus obovatis obtusis in petiolum attenuatis superioribus ovalibus oblongisve acutis sessilibus vel semiamplectentibus, dentibus callosis, capitulis pedicellatis confertis in thyrsum ovato-oblongum digestis, involucri foliolis linearibus subulato-acuminatis barbato-villosis disco longioribus, corollis femineis glaberrimis stylo longe exserto bifido, masculis sub-20 extus muriculatis apice penicillatis. In Ceylani montibus alt. 1000 hexap. Quam maxime affinis *Blumeae hieracifoliae* DeC., at involucro differt. *Blumeae hieracifoliae* a cl. De Candolle flores masculi 5 in capitulo quoque tribuuntur, at semper plures (sub-10) observavi; stylus etiam dicitur esse subindivisus, qui in exemplis meis bifidus est ut in *Blumea crinita*, at vero minus exsertus. In specie utraque corollas masculas extus muriculatas vidi, at in *Blumea hieracifolia* nunquam apice pilis aliquot penicillatas ut in altera.

MOONIA (Arn.).

Capitula heterogama, disco masculo, radio femineo uniseriali sub-5-floro. *Involucrum* biseriale oligophyllum; foliola exteriora 4—5 herbacea, patenti-recurva; interiora sub-5, erecta. *Rhachis* bracteolata, bracteolis oblongis membranaceis uninerviis. *Corolla feminea* ligulata, subpersistens, subquadrata, 3-fida; *mascula* infundibuliformis. *Antherae* nigricantes, ecaudatae. *Stylus* floris feminei apice bifidus, cruribus linearibus longis revolutis; floris masculi simplicissimus, aequalis, apice summo glaber, deorsum pubescens. *Achaenium* obcompressum, utrinque

marginatum, oblongum, ecorticatum, laeve, apice cornubus binis brevissimis tuberculiformibus coronatum. Suffrutex *perennis, (herbaeus?,) habitu* Bidentis. Ramuli *glabriusculi.* Folia *opposita, longe petiolata, integra vel biternatim secta, serrata, serraturis mucronatis, glabra vel parce pilosa, subtus pallida.* Pedunculus *terminalis, nudus, gracilis, elongatus, monocephalus.* Flores *lutei.*

Apparet hoc genus in nomine ALEXANDRI MOON, Catalogi plantarum Ceylanicarum (a Catalogue of Ceylon plants) auctoris, de scientia nostra maxime meriti.

De iusta sede in methodo Lessingiana Mooniae adsignanda in dubitationem nonnullam adductus sum, scilicet utrum inter Senecionideas Parthenieas iuxta *Tragoceras* novum hoc genus ponendum sit, an potius adscribendum *Silphieis,* quibus, si ad styli florum masculorum structuram respicis, facile proximum iudicares; nihilominus equidem in priorem sententiam magis inclino, cum tanti sit his plantis *Bidentium* similitudo.

102. *Moonia heterophylla* (Arn.). In Ceylano.

103. *Senecio Walkeri* (Arn.); caule scandente tereti striato ramoso, foliis longe petiolatis exstipulatis cordato-ovatis breviter acuminatis denticulatis utrinque subconcoloribus glabriusculisque basi 3—7-nervibus, corymbis axillaribus terminalibusque densis polycephalis longiuscule pedunculatis, involucro sub-8-phyllo basi bracteolis subulatis instructo, ligulis nullis, achaeniis glabris. In Ceylano alt. 1000 hexap. Fortasse est varietas *Senecionis corymbosi,* cui praximus; at vero folia adulta subtus glabra haud dense tomentosa.

104. *Senecio gracilis* (Arn.); herbaceus (annuus?), caulibus basi scabridis simplicibus vel ramosis, ramis glabris elongatis gracilibus oligocephalis (in nostris exemplis 1—2-cephalis), foliis infimis

oblongo-lanceolatis acuminatis basi in petiolum longum attenuatis, superioribus raris linearibus elongatis sessilibus marginè revolutis, omnibus integerrimis supra scabriusculis subtus hispidulis, pedunculis elongatis apice bracteolatis, involucri foliolis linearibus apice obtusiusculis ciliatis, ligulis 14—16 subrevolutis. In Ceylano. Affinis *Senecioni Neelgherrensi*, at in exemplis quae vidimus folia omnia integra sunt et superiora haud basi amplectentia.

105. *Senecio laciniosus* (Wall.?); annuus erectus glaber humilis simpliciusculus, foliis semel bisve pinnatifidis, laciniis patentibus linearibus acutiusculis, corymbo oligocephalo, capitulis pedunculatis, involucri foliolis glabris lanceolatis acutiusculis, ligulis 8—10 planis patentibus. In Peninsula Indiae orientalis. *Senecionis laciniosi* Wallichii specimen originale adhucdum non vidi. Isthic autem cum Peninsulae indigenus esse dicatur, et nostra specimina sola sint, quae foliis dissectis praedita e Peninsula viderim, eiusdem speciei esse mihi persuasi.

106. *Doronicum Lessingianum* (Wight et Arn.); caulibus elongatis subteretibus striatis hirsutis, foliis cordato-amplexicaulibus oblongo-lanceolatis paucinerviis inciso-serratis, corymbo oligocephalo terminali, pedunculis bracteolatis, bracteolis lineari-subulatis, involucri subhemisphaerici foliolis exterioribus linearisubulatis laeviusculis interiora oblongo-lanceolata muricato-subhispida aequantibus, ligulis 8—10 angustè ovalibus sub-9-nervibus. *Wight. Cat. n.* 1507. In Peninsulae australioris montibus. Affine *Doronico Arnottii* De C., at vix varietas luxurians esse potest.

107. *Doronicum Walkeri* (Arn.); caule herbaceo erecto simplici (½—2-pedali) basi hirsuto apice glabriusculo, foliis infimis paucis ovatis petiolatis grosse duplicato-serratis, mediis ad petioli ba-

sin auriculatis, superioribus oblongis incisis serratis basi amplectentibus, omnibus utrinque parce hispidulis subtus pallidis, corymbo laxo oligocephalo, pedunculis squamatis, squamis subulatis, involucri uniserialis foliolis lanceolatis acutis glabris, ligulis 8 planis anguste ovalibus 4-nerviis. In Ceylani montibus alt. 1000 hexap.

108. *Doronicum Candolleanum* (Wight et Arn.); suffruticosum ramosum, ramis striatis glabriusculis oligo- (1—2-) cephalis, foliis subincanis hispido-pubescentibus pinnatifidis, laciniis brevibus oblongis acutis quandoque denticulo brevi instructis, pedunculis ad apicem squamatis squamis minutis, involucri uniserialis foliolis lanceolatis dorso cano-hispidis, ligulis 8—10 anguste ovalibus 3—5-nervibus. *Wight. Cat. n.* 1508. In Peninsulae Indiae orientalis montibus australioribus.

109. *Gynura nudicaulis* (Arn.); herbacea, radice tuberifera, caulibus subsimplicibus glabriusculis striatis, foliis crassiusculis fere omnibus radicalibus lyrato-pinnatifidis iunioribus cano-pubescentibus adultis subglabris, caulinis paucis distantibus linearioblongis pinnatifidis, corymbo oligocephalo contracto, pedunculis cano-pubescentibus, bracteolis paucis subulatis, involucro subcampanulato flosculis subaequali bracteolis duplo longiori. In Peninsula Indiae orientalis. — Valde huic est affinis *Gynura bulbosa* Hook. et Arn. (seu *Cacalia bulbosa* Lour.), at illi folia sunt magis carnosa et subtus venis purpureis approximatis elegantter lineolata.

Loganiaceae: Subordo Gaertnerieae.

Sykesia (Arn.).

Calyx turbinatus, repando-5-dentatus, dentibus acutis, demum late cupulatus. *Corolla* infundibuliformis; tubo ad antherarum

insertiones barbato; limbo 5-fido, aestivatione convoluto-imbricata. *Stamina* 5: *filamenta* brevia vel subnulla: *Antherae* lineari-oblongae: pollen compresso-sphaericum, triangulare, laeve, angulis papilla sphaerica maiuscula instructis. *Ovarium* calyci subaccretum, truncatum, biloculare, biovulatum, ovulis ad loculorum basin erectis. *Stylus* filiformis. *Stigma* pubescens vel puberulum, bifidum. *Bacca* sicca, crustacea, libera, utrinque sulco notata, bilocularis: loculis monospermis. *Semina* erecta, orbicularia, plano-convexa, esulcata. *Albumen* corneum. *Embryo* erectus, minutus, in regione umbilici situs. Frutices Ceylanici, *glabri*. Folia opposita, petiolata, integra et integerrima; stipulis intrafoliaceis vaginantibus longe tubulosis, nec truncatis nec plurisetiferis. Flores paniculati: pedicelli versus apicem, vel calyces ad basin, bracteolis 1—2 minutis, quandoque obsoletis, instructi.

Honori meritisque cl. SYKES, qui circa „Bombay" plurimas plantas legit, raras sane at nescio quo casu adhuc a nullo Botanicorum descriptas, genus hoc dedicavi.

Etiamsi species Gaertnerae generis Lamarckiani genuinae, quae viderim, haud omnino perfectae essent et bene conservatae, id saltem manifesto deprehensum apparebat, species nostras Ceylanicas cum Gaertneris non esse consociandas. Igitur, cum meliores characteres in promtu non essent, ad distinguendum novum hoc genus tubum corollae barbatum arripui, qui veris Gaertneris, quoad observari a me potuerunt, non est tributus. — Fructum *Gaertnerae* drupam esse nucleo duplici chartaceo praeditam perhibent Gaertnerus et Lamarckius; quod quidem haud maximi facio, cum figurae, a Gaertnero exhibitae, structurae quam supra descripsi, aeque conveniant. Stylum bifidum stigmatibus capitatis Gaertnerae tribuens, aperte erravit Lamarckius;

namque stylus his plantis integer est, stigma autem bipartitum, segmentis lineari-oblongis. Stipulae Gaertneriarum amplae sunt truncatae setulisque nonnullis praeditae, pollen autem (Gaertnerae paniculatae) *) a Mohlio describitur sphaericum papillisque crebris conspersum, quod ipse in omnibus quas examini subieci speciebus comprobavi, licet propriis observationibus hoc in casu non omnino confidam propterea quod pollen a me observatum ex antheris immaturis laesisque desumtum esset. Caeterum utrumque horum generum gaudet „ovario binovulato“ et „fructu dispermo ovulis seminibusque erectis“, quam ob rem, accedente etiam „stigmate bipartito“ (sive stylo apice bifido) genera haec cum reliquis Loganieis, servato charactere quo nunc definire solent istum subordinem, sola genera Loganiam et Geniostoma (quod sciam) rite amplectentem, intra eosdem terminos coniungi nequeunt.

110. *Sykesia Koenigii* (Arn.); foliis obovato-oblongis ovalibusve breviter acuminatis basi attenuatis, panicula composita trichotoma corymbiformi minute puberula pedunculata foliis breviore, corollae tubo calycem subduplo excedente ore barbato, antheris exsertis, filamentis conspicuis. Psychotria vaginans *DeC. Prodr. IV. p.* 520; *Wight. Cat. n.* 1352; *Wight. et Arn. Prodr. fl. Pen. I. p.* 434. In Ceylano.

111. *Sykesia thyrsiflora* (Arn.); foliis oblongo-lanceolatis apice longe attenuatis basi acuminatis, panicula simplici thyrsiformi pedunculata folia superante, corollae tubo calyce duplo longiore ore barbato, antheris exsertis, filamentis conspicuis, stylo pubescente. In Ceylano.

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*) *Gaertnera racemosa* Roxb., quam ad eundem ordinem refert cl. Mohlius, Malpighiacea est, et pollen valde diversum exhibet.

112. *Sykesia Walkeri* (Arn.); foliis oblongo-lanceolatis apice longe ac tenuiter attenuatis basi acuminatis, panicula simplici thyrsiformi pedunculata folia superante, corollae elongatae tubo calyce 5—6-plo longiore intus medio barbato, antheris inclusis, stylo puberulo. In Ceylano.

LABIATAE.

113. *Plectranthus Walkeri* (Arn.); caule herbaceo erecto simpliciusculo puberulo, foliis anguste lanceolatis acuminatis basi integerrimis superne grosse serratis glabris in petiolum angustatis, floralibus parvis, bracteis minutissimis, panicula simpliciuscula pauciflora, calycibus fructiferis declinatis ovatis incurvis striatis glabris ore bilabiato dentibus ovalibus obtusis subaequalibus, corollis basi declinatis et superne gibbis tubo calyce 3-plo longiore, staminibus exsertis. In montibus Ceylani. (Vidi tantum exemplum unicum in herb. Grahamii.) Affinis *Plectrantho Gerardiano* Benth.

114. *Coleus Benthamianus* (Arn.); caule subcarnoso glabriusculo, foliis petiolatis oblongo-lanceolatis acuminatis basi cuneatis et in petiolum attenuatis dentato-serratis crassiusculis subrigidis supra glabriusculis subtus pallidis praecipue ad nervos venasque pilis articulatis adspersis, floralibus deciduis, petiolis rufo-pubescentibus, racemo terminali paniculiformi, verticillastris cymbiformibus, pedunculo communi utrinque subelongato ramis brevibus, pedicellis calyce brevioribus, calycibus fructiferis declinatis minutissime puberulis ovatis, fauce intus nuda, dente supremo ovato longiuscule acuminato supra concavo inferioribus lanceolato-subulatis subaequalibus basi vix connatis, corollae tubo flexuoso elongato fauce ampliata labiis subaequalibus. In Ceylani montibus. (Vidi solummodo in herbario cl. Grahamii.) Affinis *Coleo glabrato* et *Coleo paniculato* Benth.

115. *Leucas* (Astrodon) *hamatula* (Wight et Arn.); erecta (suffruticosa?) rufo-canescens, foliis lineari-lanceolatis obtusis obtuse serratis supra cano-pubescentibus subtus albido-subtomentosis, verticillastris approximatis, calycibus cano-pubescentibus tubulosis infra medium paullum inflatis ore aequali intus villoso in dentes 10 breves aequaliter fisso, dentibus bracteisque mollibus apice revolutis, corollae tubo intus annulato. *Wight. Cat. n.* 2241. In Peninsula, forsan in Mysore, legit D. Campbell. Folia 1—1½ pollicaria, floralia calyces superantia. Charactere ad *Leucam stelligeram* accedit, at habitu multo affinior est *Leucae rosmarinifoliae.* Ab omnibus speciebus huius sectionis differt calyce haud truncato sed 10-fido lobis seu dentibus basi latis ac se mutuo contingentibus. In systemate post *Leucam ternifoliam* collocari potest.

SCROPHULARINAE.

116. *Pterostigma capitatum* (Benth.). In exemplis omnibus, quae vidi, tam in Peninsula quam in Ceylano lecta, capsula iunior est apice attenuata vel rostrata; at posteaquam grandefacta est, oblonga aut vix ac ne vix quidem rostrata apparet, tum denique dehiscente capsula valvulae rursus apice rostratae evadunt. In omni autem statu ovarium seu capsula supra basin ovatam subito contrahitur et itaque potius rostrata quam oblonga describi potest. Calyx (nisi a fructu ruptus) nunquam est 5-partitus, sed semper circiter ad medium usque fissus. Quibus commotus, *Pterostigma spicatum* rursum ad *Pterostigma capitatum* refero.

117. *Glossostigma spathulatum* (Wight et Arn.). *Wight. Cat. n.* 2190. Microcarpaea spathulata *Hook. Bot. misc. II. p.* 101. *Suppl. t.* 4; *Benth. Scroph. Ind. p.* 31. Limosella diandra *Linn. Mant. p.* 252. Character genericus, a cl. Benthamio l. c.

datus, bonus est, at genus hoc certo diversum est a *Microcarpaea* Brownii; quam etiam in Peninsula atque Ceylano lectam possideo. In Glossostigmate calyx est campanulatus, breviter trilobus, et extus laevis; in *Microcarpaea* autem tubulosus, 5-costatus, 5-gonus, 5-fidus.

118. *Büchnera longiflora* (Arn.); pusilla glabra laevis, foliis inferioribus integris filiformibus, superioribus pinnatisectis segmentis paucis filiformibus, calycibus profunde 5-fidis 5-costatis, corollae (pallide caeruleae) glabrae tubo gracili elongato (1½—2-pollicari!) apice recto, limbo subaequali, fructu compresso late ovato peroblique rostrato. In ora Malabariae ad Cannanore; *D. Campbell.* Calyx sectionis *Campuleiae*, corollae tubus *Peripeae.* Haec species nulli, quam equidem viderim, affinis est.

Addenda.

Academiae exhibita die XVI. Maii a. MDCCCXXXVI.

1. *Olax Heyneana* Wall. Cat. n. 6780. — Huius speciei exemplum denique accepi littera „B“ notatum, quo accuratius inspecto, non esse hanc *Olacis* speciem sed eiusdem atque *Gomphandram Pinangianam* Wall. generis maximeque Gomphandrae illi coniunctam. In neutro autem horum speciminum floris structuram tam perspicue exquirere potui, ut certa veri specie diiudicarem, an cum *Lasianthera tetrandra* Wall., quae sola *Gomphandrae* generis typus, eodem charactere generico conspirent istae species, an potius ab eodem sint separandae. In alabastro a me dissecto staminum et numerus et structura differre videbantur a communi Gomphandrarum indole.
2. *Connarus monocarpus.* Specimina, a memet Wightioque in Prodromo (I. p. 143) descripta, fructus nec flores perfectos exhibebant, quo nescio an in errorem graviorem inducti simus. Etenim cum novissimo isto tempore alia specimina, quae flores perfectos fructusque ferebant, inspicerem, stylos in quoque flore quinos reperi; ex quo sequitur, speciem istam non *Connari* esse generis sed *Roureae*, nec fere aliam omnino esse speciem ac *Rouream santaloidem* W. et A. Scilicet, specimina nostra huius Roureae teneri apparent ramuli tempore florum e iuvenili ramo decerpti, quorum igitur folia tenuiora inventa sunt et membranaceo-coriacea, cum *Connari* contra nostri *monocarpi* folia pleraque latiora sint, saepe basi subcordata, et crasso-coriacea. Utriusque autem inflorescentia prodit axillaris floribus ovarioque glabris. Ad hanc speciem referendum esse synonymon Rheed. H. Mal. VII.

t. 26. existimo, reliqua autem synonyma omnia, a me Wightioque olim citata, vero adscribenda esse censeo *Connaro monocarpo* Lin., quem *Connarum pinnatum* Lamarckio appellatum iam mihi persuasum est. Specimen equidem herbarii Hermanniani, quod fundamento erat isti speciei sive Florae Zeylanicae n. 248, ipse nondum vidi, argumenti autem aliquid ad comprobandam meam sententiam hausi e specimine *Connari pinnati* Lam., quod nuper Ceylano advectum vidi nomine signatum barbaro *Ratu-Radalya*, consono sane illi Radelisawael a Linnaeo ad hanc speciem adnotato. Fatendum tamen, levioris omnino habenda esse argumenta a nominibus vulgatis plantarum derivanda, ipsumque Linnaeum Radalya nomen ad Sophoram heptaphyllam retulisse.

3. *Crotallaria nana.* Plantam, quam hoc nomine appellatam descripsimus, consentiente etiam Wightio viro dilectissimo, eandem quam Burmannus pridem notam effecit, esse speciem statuebamus, neque immerito id quidem, cum tanta iconis ab illo editae speciminumque nostrorum existere videretur congruentia. Animadvertendum est autem (quod l.c. addere negleximus), Burmanno plantam hanc e Iava insula esse adlatam, et Candollium, qui specimen originale vidit, folia isti speciei tribuere glabra, quae pilosa sunt omnibus speciminibus, quotquot eius nominis in Peninsula aut in Ceylano insula collecta vidimus.

CUCURBITACEAE.

4. *Zanonia Wightiana* (Arn.); caule glabro, foliis trifoliolatis glabris, foliolis oblongo-lanceolatis acuminatis serratis lateralibus basi oblique subcordatis, calyce (maris) 5-partito laciniis obtusis, corollae gamopetalae segmentis lanceolatis apice longe subulato-attenuatis, filamentis in columnam tenuem omnino coalitis,

antheris 5 radiatim patentibus. In Ceylano insula (fide herb. Wight).

CONVOLVULACEAE.

5. *Argyreia hirsuta* (W. et A.); ramis petiolis pedunculisque patentim hirsuto-pilosis, foliis rotundato-cordatis breviter acuminatis supra viridibus adpresse strigoso-hirsutis subtus cinereo-albidis, subhirsuto-tomentosis, pedunculis folia subaequantibus vel superantibus apice cymoso-multifloris, bracteis lineari-oblongis vel anguste linearibus cum floribus intermixtis, sepalis ovato-ellipticis saepius obtusis externe hirsutis. *Wight. Cat. n.* 2254. In montibus Peninsulae australioribus; *Wight.*

Species *Argyreiae Neelgherryanae* Ch. affinis, at foliis subtus tomentosis distincta. Corolla eiusdem coloris atque magnitudinis atque illius. Fructus globulari-ovatus, glaber. Flos inflorescentiae infimus, in dichotomia situs, sepala praesertim exteriora lineari-lanceolata et acuminata exhibet, in floribus autem superioribus sepala sunt plus minusve obtusa.

6. *Argyreia pilosa* (W. et A.), patentim hirsuta, foliis orbiculari-cordatis utrinque strigoso-hirsutis subtus pallidis subglaucisque, pilis e tuberculis ortis, pedunculis foliis brevioribus apice umbellatim pauci- (2—5-) floris, bracteis linearibus cum floribus intermixtis, sepalis lineari-lanceolatis acuminatis bracteas aequantibus externe hirsutis, corolla externe hirsutissima. *Wight. Cat. n.* 2255. In Peninsulae montibus australioribus; *Wight.*

Varietas est *Argyreiae Neelgherryanae* Ch. verae, mihi adhuc non visae; at diversa species esse videtur foliis subtus non rufescentibus sed lividis glaucisve, atque sepalorum forma. Corolla fere eadem.

7. Propositum mihi fuit, hac occasione data addere nonnulla, quae in characteribus specificis Convolvulacearum, a cl. Choisy exhibitis,

speciminibus Wightianis non omnino congrua videbantur proptereaque corrigenda. Iam vero mutato consilio haec omnia secundo Prodromi nostri volumini inserenda remitto. Hoc unum isto loco monebo, clarissimum auctorem in synonymis hinc inde errasse, cum, Wallichium Florae Indicae auctorem esse persuasus, Floram hanc secundum specimina Herbarii Wallichiani citaret, cum tamen ipse Wallichius de Roxburghii (dictae Florae veri auctoris) sententia saepenumero dubius haeserit.

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8. The following extract from a letter which I have lately received from Dr. Wight may be interesting:

„I have lately received a copy of the first volume of the Flora Senegambiae, which, although hitherto I have only had time to examine the plates, satisfies me how much the flora of that country and of the Peninsula agrees, and that if we had the specimens to compare, we meight reduce the number of species considerably more then proposed by you in the Annales des sciences naturelles: Thus *Cocculus Bakis* resembles too closely our *Cocculus cordifolia*, and the *Cissampelos mucronata* is scarcely a variety of *Cissampelos convolvulacea: Triumfetta pentandra* seems so much allied to our *Triumfetta angulata*, that if I saw it growing in India, I should pass it as such: *Heudelotia africana* belongs, as I think, to the same genus as our *Protium Gileadense*, and is, I suspeet, a native of this country, at least I have a plant *very like it*, a large shrub, which I found near Bellary: *Dalbergia melanoxylon* appears to be precisely our *Dalbergia frondosa.*“

EXCURSUS

DE

SOLANO WIGHTII,

QUEM ARNOTTII COLLEGAE OBSERVATIONIBUS

ADDIDIT

NEES AB ESENBECK.

Dum ea, quae in antecedentibus de pluribus Indiae orientalis plantis et inter eas maxime Ceylanicis summa eruditione et ingenii acumine disseruit Arnottius, collega et amicus summe colendus, legebam typisque exscribenda curabam, subit animum recordatio Wightii, viri clarissimi iam in Indiae vastis regionibus ad novas opulentissimasque plantarum messes rursus conversi, quem quidem atque Wallichiumque virum dilectissimum Deus ut sospites nobis conservet, precamur. Inter haec autem, uti fieri solet, cum amicorum longo terrarum spatio a nobis disiunctorum recordatione in curas et sollicitudinem abripimur, ut ad imagines illorum pictas oculos convertamus easque mente perspicaci intuentes et vivere ipsos quos tanquam vivos et praesentes adspicimus, et esse sanos ac salvos nobis persuadeamus, imaginem equidem quaerebam viri praestantissimi; sed frustra id egi, qui quidem nec vultum viri praesentis neque pictam eius imaginem unquam conspexerim.

Igitur mentem in alia re locabam, quae saltem nomen in memoriam revocaret et imaginem quandam haud ingratam, etiamsi a vera alienam, adiungeret. Atque inter plurimas, quae viri clarissimi cognomine ornantur plantas iam una se ipsa quasi sponte obtulit, cuius figuram in tabula splendida pictam nuper mihi tradiderat Arnottius noster, admonens ut errorem in descriptione Solanearum Indiae orientalis (Transactions of the Linnean Society XVII. p. 51) a me commissum corrigerem: „*Solanum* etenim *Wightii*, quod l.c. inter Solana torva posui (scil. quod solos fructus nec florem tunc temporis vidissem) antheris inaequalibus praeditum inter *Nycteria* Ventenatii esse referendum atque *Solano pubescenti* Willd. (Linn. Transact. p.60. n. 29.) ad latus ponendum."

Haec cum iuste et prudenter praecepta viderentur, non solum amico volenti obtemperans sed proprio animi motu conductus, iconem *Solani Wightii*, ad tabulam Musei Arnottiani descriptam, novosque characteres specificos ac descriptionem ampliorem ad naturam factam coronidis loco iam adiicio.

SOLANUM. Sect. VI. NYCTERIUM. (Vent.)

N. ab E. Sol. Ind. or. in Transact. Linn. XVII. p.60.

SOLANUM (Nycterium) WIGHTII.

Sol. herbaceum aciculato-aculeolatum fasciculato-hirsutum, foliis cordato-ovatis vel ellipticis repando-sinuatis, pedunculis fructiferis elongatis reflexis, antheris tribus inferioribus productioribus, fructu calyce tecto.

Solanum Wightii *N. ab. E. in Transact. Linn.* XVII. *p.*51. *n.* 20. *(perperam inter* Solana torva *relatum.) Wight. Herb. propr. n.* $\frac{1576}{126}$.

Crescit in Peninsula Indiae orientalis. ♃? Vidi specimina Herbarii Wightiani et Wallichiani.

Inter reliqua Solana, *Nycteria* dicta, haec species iam solis fructibus in pedunculis suis elongatis reflexis, plerisque geminis et bacca una cum calyce increscente facili negotio distinguitur. Habitu quidem est *Torvorum*, sed quoad florem omnino *Nycteriorum*.

Ramus teres, crassitie pennae gallinaceae, strato fibrarum tenui sublignescente, medulla laxa farctus, uti petioli, folia, pedunculi et calyces pilis densis erectis fasciculatis griseis hirsutus. Aculei graciles, aciculares, sparsi, per intervalla confertiores, recti vel subrecurvi, reclinati, glabri, in caule petiolis parciusque in foliorum costa venisque utriusque paginae dispersi. *Folia* in nostro exemplo alterna, cum petiolo semitereti pollicari 4½—5 pollices longa, 1¾—2 pollices lata, basi obtusa vel subcordata apicem versus magis minusve attenuata, acuta, utrinque sinubus 2—3 repanda, lobis obtusis vel acutis parum prominentibus, apicem versus integra, subtus pallidiora, nec vero albicantia. *Pedunculi* communes laterales, vix 2—3 lineas longi, hirsutissimi, 3—4 flori, inermes. *Pedicelli* racemoso-corymbosi ante anthesin pedunculi communis longitudine cernui, post anthesin sesquipollicares, apicem versus incrassati, reflexi, inermes, hirsuti. *Calyx* hirsutus, inermis, campanulatus, ad medium usque quinquefidus, laciniis lanceolatis subulato-acuminatis et quasi aristatis. *Corolla* duos pollices lata, rotata, coerulea; limbo ad medium usque quinquefido, laciniis aequalibus triangularibus acutis margine subtiliter undulato. *Stamina* quinque limbo breviora; *filamenta* brevia; *antherae* luteae; tres inferiores lanceolato-subulatae recurvae, duae superiores duplo fere breviores, lanceolatae, apice minus attenuatae, decurvae; cunctae apice poris geminis dehiscentes. *Stylus* filiformis, longitudine antherarum inferiorum, recurvus, apice capitatus. *Bacca*

magnitudine Cerasi minoris, ovato-subglobosa, glabra, laevis, inclusa calyce persistente eiusque laciniis iam triangulari-attenuatis subulatis apice incurvis brevior, bilocularis. *Semina* albida, tuberculis exasperata.

Adnotatio. Structura floris omnino *Solani (Nycterii)* Amazonii *(Dun. Synops. p.* 36. *n.* 217. *Bot. Mag. n.* 1801. *N. ab E. Hor. phys. Berol. p.* 51. *t.* 9.), sed differt inflorescentia, armis, foliis.

Tabula XVIII.

Solani Wightii ramus naturali magnitudine cum florum et fructus analysi, ulteriori non indigens explicatione.

Solanum (Nycterium) Wightii N. & E.

X. *On the Vegetation of the Galapagos Archipelago, as compared with that of some other Tropical Islands and of the Continent of America. By* Joseph Dalton Hooker, *Esq., M.D., F.R.S., F.L.S. &c. &c.*

Read December 1st and 15th, 1846.

THE Florula of the Galapagos Islands, which I recently had the honour of laying before this Society, was drawn up with the view of enabling me to discuss at length the geographical distribution of the plants contained in that singular Archipelago. As a field of observation, this group possesses the rare advantage of being one whose vegetation has never been interfered with by any aborigines of the human race; and it is only very lately that the operations of man, or of animals introduced by his means, have disturbed the indigenous Flora, and that to a very limited extent only. It possesses the further singularity of containing a Flora differing by upwards of one-half its species from that of the rest of the globe, a peculiarity shared by no other tract of land of equal size, excepting perhaps the Sandwich group; whilst only three out of the 123 new species, collected by various voyagers, have been previously described.

Before commencing the study of the plants, I was assured of their being of a very novel character, especially from the masterly sketch of the unique zoology and the unequal dispersion of the species over the several islets composing this group given by Mr. Darwin, to whose comprehensive view of the natural history of the Galapagos this essay can be considered as supplementary only. The results of my examination have been, that the relationship of the Flora to that of the adjacent continent is a double one, the peculiar or new species being for the most part allied to plants of the cooler parts of America, or the uplands of the tropical latitudes, whilst the non-peculiar are the same as abound chiefly in the hot and damper regions, as the West Indian islands and the shores of the Gulf of Mexico; also that, as

is the case with the Fauna, many of the species, and these the most remarkable, are confined to one islet of the group, and often represented in others by similar, but specifically very distinct congeners.

This examination has led me to take a survey of the vegetation of several other tropical islands, whose plants present much peculiarity, and to trace the effects of isolation in geographical position upon vegetation; as well as certain characters in some orders, their distribution and proportions, which seem to distinguish insular floras from the continental.

Before entering upon the details of the vegetation, I shall shortly allude to the position of the Galapagos, and some of their most important features of climate and soil which affect the plants, and which I shall extract from the Journals of Mr. Darwin and of other voyagers, including one by the late Mr. T. Edmonstone, hitherto unpublished.

The Archipelago consists of ten islands situated under the equator, between 500 and 600 miles west of the mainland of America at Guayaquil, and the same from the Isthmus of Panama, which lies to the north, and 3000 miles from the nearest of the tropical Pacific islands. The islets are wholly volcanic; several of the peaks attain a height of 3000 to 4700 feet, some having their flanks studded with innumerable small craters. These are considered to have been formed in the sea, and to be, as compared to the adjoining continent, of recent formation.

The climate is far from intensely hot, being moderated both by the insularity of their position and the low temperature of the waters of the great south-polar current which washes their shores. The extremes of temperatures observed at different times of day between 9 A.M. and 3 P.M. for thirty-five days in September and October include a range of eight degrees only (73° and 65°). These are however, according to Capt. Fitzroy's observations, taken on board ship. The plants on shore are exposed to a much higher and very prejudicial temperature. Thus Mr. Darwin experienced a heat of 93° in his tent, when the thermometer stood at 85° only in the wind and sun, but which, when plunged into the soil, rose at once to 137°, and would have risen higher had the tube been longer. On the other hand, nocturnal radiation does not in all probability reduce the temperature proportionally, the nights being generally misty. The prevailing weather is overcast and gloomy, the winds varying for the period alluded to

between south and east. A failure of this, the trade-wind, caused the extraordinary rise of the thermometer mentioned above.

The nature of the coasts and surface of the islands is in some measure indicated by the plants contained in the various collections, some of the more generally diffused of which may thus be classified with reference to locality.

The genera *Avicennia* and *Rhizophora*, species of both of which bear the name of Mangrove in different parts of the world, prove that in some of the islands at least (Charles and Chatham) there is a phænogamic vegetation below high-water mark. On the other hand, from the steepness of the coasts and dryness of the soil near the ocean, there appear to be few maritime plants. Those which I presume to be more strictly such are *Cissampelos Pareira*, *Tephrosia littoralis*, *Scævola Plumieri*, *Convolvulus maritimus*, *Calystegia Soldanella*, *Verbena littoralis* and *Heliotropium Curassavicum*, all natives of the South American coast, and to which may probably be added some of the peculiar *Amaranthaceæ*.

The lower parts of the island are very arid and rocky, presenting thickets of starved shrubs and leafless trees, and to these situations are assigned* the weeds of the Flora, such as herbaceous or suffrutescent *Malvaceæ* and *Euphorbiaceæ*, many species of *Borreria*, some *Compositæ*, various *Lycopersica*, *Verbenæ*, *Galapagoa*, *Boerhaavia* and some grasses; to which may be added some larger shrubs, as small trees of *Acacia*, *Castela*, *Cactus* and *Opuntia*. Where marshy land occurs, and this is not uncommon on the summits, several species of *Cyperus* and *Mariscus* appear; and to a salt lake, which is beautifully fringed with succulent plants, belong *Portulaca*, some *Amaranthaceæ*, *Pleuropetalum*, and probably *Sesuvium*.

On ascending the hills the climate and vegetation both suddenly change, the sea-vapours are condensed on the higher parts of the islands, and a comparatively luxuriant flora is the consequence. From these more favoured localities are brought the greater number of the very peculiar vegetable forms of the island; curious arborescent *Compositæ*, which have no near allies in other parts of the globe, and of which there are eight species in this group, all

* In thus assigning localities to the species, I have been guided in many cases by notes attached to the specimens, in some by the plant growing in islands of a uniform surface and character, and in not a few instances by a knowledge of the situations which the species affect in other parts of the world.

closely related to one another. Associated with these are trees of *Phytolacca, Leguminosæ, Psidium, Psychotria, Chiococca* and *Clerodendron*, all tropical in appearance, accompanied by others no less characteristic either of a warm and equable temperature, humid atmosphere or wooded region; such are the genera *Passiflora, Viscum, Ipomœa, Epidendrum* and *Peperomia*, with the great majority of the Ferns, and all the *Jungermanniæ* and *Musci* that have been collected on the group.

The naturalists who have explored this archipelago are very few in number, and as all have added more or less to a knowledge of its botany, I shall mention their names in the order of the date of their respective visits. Mr. Hugh Cuming in 1829 paid a very short visit to the islands. The late David Douglas and Dr. Scouler touched at James's Island on their way to the Columbia River. Mr. Macrae landed on three of the islets when employed in collecting by the Horticultural Society, and formed a rather considerable herbarium. In 1835, Mr. Darwin spent some weeks in the archipelago, visited four islets, and formed the excellent collection of upwards of 200 species which forms the groundwork of this essay. Admiral Du Petit Thouars collected a few plants in one island only, for specimens of which I am indebted to the kindness of M. Decaisne of Paris, and very recently one of the Galapagos group was the last place explored by the lamented Mr. Edmonstone in the winter of 1845. His herbarium is second to that of Mr. Darwin in numbers, and contains several plants which are not in any of the others. The total number of species brought together from these various sources amounts to 265, of which 225 are flowering plants, and 28 Ferns. The other orders of *Cryptogamia* have not been attended to by any collector: of these there are 2 *Musci*, 6 *Hepaticæ*, 3 *Lichens* and a *Fungus*. All the above, except perhaps 17, natives of Charles, the only inhabited island, are truly indigenous to the group: but that this is only an approximation to the real number of species inhabiting the archipelago is probable from the circumstance of only 40 of these having been collected by more than one of the six collectors whose herbaria I have examined.

Under any circumstances it appears that the Flora of the Galapagos is an exceedingly poor one when compared with that of other tropical islands of their own or even less extent. Thus the Cape Verds, scarcely so well

explored, (and whose mountains, which attain 8000 feet, have not been ascended above 1000 feet,) are known to yield upwards of 300 species on a soil quite as sterile as that of the Galapagos, whilst the Sandwich and Society groups are much richer, though further detached from any continent. What however is known suffices to institute a comparison between the vegetation of this group and that of the neighbouring continent and with that of other tropical islets; a subject which divides itself into the following branches:—

I. As the most important considerations regarding the vegetation of a country relate to its most characteristic natural orders, I shall first offer a few observations upon the number of species contained in the different families, and on the proportion which each of the principal ones bears to the whole Flora, and then compare the results with what have been obtained on the neighbouring continent, or on other islands somewhat similarly circumstanced with the Galapagos.

II. Here, as in other countries, the vegetation is formed of two classes of plants; the one peculiar to the group, the other identical with what are found elsewhere. In this there are even indications of the presence of two nearly equal Floras, an indigenous and introduced, and these are of a somewhat different stamp; for the introduced species are for the most part the plants of the West Indian islands and of the lower hot parts of the South American coast; whilst the peculiar Flora is chiefly made up of species not allied to the introduced, but to the vegetation which occurs in the Cordillera or the extra-tropical parts of America.

III. In the third place, I shall allude to the most singular feature in the botany of the group, the unequal dispersion of the species, the restriction of most of them to one islet, and the representation of others by allied species in two or more of the other islets.

The first peculiarity in the Flora of the Galapagos which demands attention is the paucity of Monocotyledonous plants, which hardly equal $\frac{1}{9}$ of the Dicotyledons. In all tropical countries the *Monocotyledones* bear a smaller proportion to the *Dicotyledones* than is found in the temperate or colder latitudes: Baron Humboldt has stated this proportion to be $\frac{1}{6}$ of the vegetation for the tropics of the new world, and Mr. Brown $\frac{1}{5}$ for that of the old. As however that of Baron Humboldt was obtained from materials collected partly from very

nigh levels, where the tropical proportion no longer obtains, it is probable that Mr. Brown's results are the more accurate. If the Galapagos number of *Monocotyledones* is small as compared with that of the continent, it is even more so with regard to that of other tropical islands: thus in St. Helena they equal nearly $\frac{1}{5}$ of the *Dicotyledones*, in the Society Islands $\frac{1}{4\,2}$, and in the Sandwich Islands $\frac{1}{4}$. This paucity is not due to the sterility of the soil or dryness of the climate, for the Cape Verd proportion is $\frac{1}{5}$, these islets being, as I have mentioned above, equally barren with the Galapagos.

Although I can offer no explanation of this apparent anomaly, it may not be out of place to notice here, that the tropical islands in general possess proportionally more *Monocotyledones* than do the continents. This is no doubt due to the same causes which determine the increased proportion which the temperate zone shows over the tropical, and is the more striking from this circumstance, that the nearer the tropical islet is to a great continent, the greater does the proportional number of *Dicotyledones* become, as is shown by the Galapagos and Cape Verds, both adjacent to great continents, possessing more than the Sandwich Islands, Society group, St. Helena, or Ascension.

The individual species of the very largest Monocotyledonous families being more widely dispersed than any of equal extent amongst the Dicotyledonous, is also a reason why the insular proportion of the latter should be different from the continental*.

If the insular tropical proportion be assumed to be $\frac{1}{4}$, it is larger than that for the islands of the Atlantic immediately beyond the tropics. Thus for the Canaries (lat. 28°) it is probably $\frac{1}{6}$, and for Madeira $\frac{1}{5\,4}$; whence they again increase

* And for the same reason great caution is required in deducing the continental proportions from small local collections, however complete in themselves. The results obtained from a small area are almost necessarily erroneous if applied to the greater one of which it forms a part, although the general features of vegetation may be well displayed by the latter. To this I attribute the remarkable discrepancy between the results obtained for West Tropical Africa by Mr. Brown, after an examination of the Congo Expedition plants, and those which my examination of the Niger Expedition collections led to, the *Monocotyledones* equalling $\frac{1}{4}$ in the former case, and $\frac{1}{6\,4}$ in the latter, of the *Dicotyledones*. This appears to be owing to the same species of *Cyperaceæ* and *Gramineæ* (which form the majority of the *Monocotyledones* in both instances) prevailing throughout a great extent of coast, but accompanied by different species of *Dicotyledones* at different parts of the same tract. Hence it is probable that up to a certain point the Monocotyledonous proportion will decrease as the area under examination is extended, and the proportion for the tropics may even fall short of $\frac{1}{4}$.

on approaching the frigid zone, from Madeira (lat. 32°) $\frac{10}{54}$, Azores (lat. 38°) $\frac{10}{41}$, Great Britain (lat. 50°·57) $\frac{1}{4}$, Shetland (lat. 60°) $\frac{10}{33}$, which is the maximum for the northern hemisphere. In the arctic regions, on the other hand, all the proportions obtained, either from isolated localities (except Melville Island) or from extended tracts, tend to confirm Mr. Brown's first theory, that the proportion is again inverted. Thus that of Iceland (lat. 65°) is $\frac{10}{48}$, Spitzbergen (lat. 78°·80) $\frac{10}{49}$, east coast of Greenland $\frac{1}{5}$, the Arctic American islets (lat. 68°) $\frac{10}{53}$, Baffin's Bay (lat. 70°·76) $\frac{10}{57}$, Port Bowen and Prince Regent's Inlet (lat. 74°) $\frac{1}{7}$. To this regular progressive decrease, Melville Island offers the only exception, its proportion being that of the Shetlands*.

From the above facts it may be assumed that equable, temperate, and rather humid climates are most favourable to a Monocotyledonous vegetation, for it diminishes both under the extreme cold of the arctic zone and the great heat of the tropics; on the other hand increasing towards the southern temperate and antarctic zones, where such conditions are best fulfilled, proportionally with the latitude, to as far south as a Phænogamic vegetation extends.

With regard to the amount of peculiarity existing in the two great divisions of flowering plants in any country, it is a curious subject, but one towards the illustration of which little has been done. Generally speaking the *Monocotyledones* present much the lesser proportion of novelty; but this is not the case in the Galapagos, nearly one-half of whose Monocotyledonous plants (10 out of 22) are confined to that group: whence it may be inferred, that the paucity of this division there in reference to the whole Flora is owing in some measure to obstacles to the transport of seeds from the continent.

The prevailing natural orders in the Galapagos are the Ferns, containing 28 species; *Compositæ* 28; *Leguminosæ* 24; *Euphorbiaceæ* 18; *Rubiaceæ* 15; *Solaneæ* 13; *Gramineæ* 12; *Amaranthaceæ* 10; *Verbenaceæ* 9; *Cyperaceæ* and *Borragineæ* each 7: of the other 43 orders none are so extensive, or are otherwise worthy of particular mention, except *Cordiaceæ*, of which there are six species, only one or perhaps two of which inhabit the adjacent continent. All

* With regard to Melville Island, it should be borne in mind that it is beyond those limits up to which every degree of latitude is marked by some one or more peculiar species of plant which is not found beyond it. It is on the verge of the extinction of terrestrial vegetation in that longitude, and therefore presents us with such species only as can struggle successfully against the climate they there encounter.

of these orders will be recognised as forming a great part of the vegetation of every tropical country, except the *Amaranthaceæ*, which however find their maximum on the west coast of South America. Hence it is not to the prevalence of any particular natural order, or the undue number of species contained in any one, that the Galapagos owe their extraordinary amount of novelty. All the general features of a tropical vegetation are retained, and even the genera to a great extent, but the change is in the species, of which one half are confined to that archipelago; and this peculiarity in species not only relates to the difference existing between the Galapagos and the mainland of America, of which it is a botanical province, but to the separate islets of the archipelago, which, as Mr. Darwin aptly remarks, should be called "a group of satellites, physically similar, organically distinct, yet intimately related to each other, and all related in a marked though much less degree to the great American continent."

GLUMACEÆ.—This somewhat artificial group, including *Gramineæ*, *Cyperaceæ* and *Junci*, has been defined by Humboldt as including the majority of *Monocotyledones* in all latitudes. In the tropics of America these collectively form $\frac{1}{11}$ of the flowering plants, which is precisely the Galapageian proportion, and one that would not be expected if the fewness of the *Monocotyledones* previously alluded to be borne in mind. Two conclusions may be drawn from this, that this paucity is owing to the scarcity of petaloid families, and that the fewness of *Gramineæ*, to which I shall next refer, is compensated by the *Cyperaceæ*.

GRAMINEÆ.—This order forms little more than $\frac{1}{20}$ of the Phænogamic flora, the smallest proportion I have obtained from any country. This is the more remarkable, as nearly three-fourths are peculiar, proving that the order, though having many species which are well adapted for transport, has not sent its colonists to the Galapagos in the same proportion as it has to other countries; as to the Sandwich Islands for instance, three-fourths of whose grasses are those of other countries. This paucity is further conspicuous from the islands within the tropics being richer in *Gramineæ* than the continents, where they do not form more than $\frac{1}{12}$, whilst in the Sandwich Islands they amount to $\frac{1}{6}$, and in the Society's, lying in the same longitude and equidistant from the equator on the opposite side, also $\frac{1}{6}$, which is the Cape Verd proportion also; a singular concurrence, considering that in all three localities the species are very dif-

ferent. The relative abundance of *Cyperaceæ* to *Gramineæ* is extremely fluctuating, though in a measure amenable to very conflicting causes, which we can only partially follow. Of the Galapageian *Gramineæ* the *Poæ* and *Paniceæ* are nearly equal, which is very unusual within the tropics; one of the species belongs to *Eutriana*, a genus almost peculiar to America, and particularly to the mountainous regions or cooler parts. Two new species belong to *Aristida*, which is also represented by a species in the sterile island of Ascension.

The Compositæ are in every respect the most remarkable family in the Galapagos, both as regards number of new species and new genera, and from their forming much of the wood of the islands. They also are the most instructive, as the species are very clearly defined: the peculiar genera have representatives in the different islets; and whilst the new species are almost wholly allied to plants from the Andes or extra-tropical parts of America, the old are almost universally the weeds of the low coast of the same continent. It is not therefore with this family as with some others, that the new species are, though permanently, only partially distinct from the continental ones, and possibly varieties due to climatic causes; but they are the representatives of species which are only found beyond the reach of direct migration, or are to a great extent entirely new genera.

In respect of the peculiarity of their *Compositæ*, the Galapagos may be compared with some other tropical islands, as the Sandwich group and St. Helena; also with two extra-tropical islands, Juan Fernandez and New Zealand. All of these have a larger amount of peculiarity in their floras than any other tracts of land of the same size. It has been noticed that the four last-named islands or groups are remarkable for possessing a great proportion of arborescent *Compositæ*, and in this too the Galapagos share, though the comparison can be carried no further between any of them; for whilst the order is here represented by *Melampodineæ* and *Heliantheæ*, in Juan Fernandez it is by *Senecioneæ* and *Cichoraceæ*, in St. Helena chiefly by *Asteroideæ*, in the Sandwich group by *Verbesineæ* and *Bidentineæ*, and in New Zealand by *Helichryseæ* and *Astereæ*. In all these cases, the further the islands are from the mainland, the less evidence do the *Compositæ* they contain afford of the botanical province to which each may belong. Thus the Galapagos contain, in the peculiar plants of this order

alone, internal evidence of a strong botanical relation between that Archipelago and Mexico, which a further examination of other orders confirms. Juan Fernandez in like manner abounds in a tribe peculiarly copious in Chili, and the New Zealand arborescent *Compositæ* are allied to, though generically and specifically very different from, those of New Holland: but on the other hand, the peculiar genera of the Sandwich group are scattered through many tribes, belonging some to the old world, and others to the new; whilst in St. Helena (the whole of whose *Compositæ* are shrubby or arborescent, and all belonging to peculiar genera), the order seems made up of the fragments of groups characteristic of very remote parts of the world: the majority belong to a genus of *Astereæ* related to what occurs in New Zealand; others to such *Labiatifloræ* as Juan Fernandez possesses; a third genus to the Melampodinous family of the Galapagos, and the fourth belongs to the same tribe of American *Compositæ*.

This order here equals $\frac{1}{8}$ of the whole Phænogamic plants, or is nearly the same as its proportion is for the flora of the whole world, and the same as that of the Sandwich group, but smaller than that of Juan Fernandez, and especially of St. Helena, where it equals one-third of the flowering plants remaining there. On the other hand, the Society group, in possessing only $\frac{1}{35}$ of *Compositæ*, the smallest number relatively to the whole flora of any tropical country, betray their relationship to the flora of the torrid zone in the old world, which in this respect is strikingly contrasted with that of the new; for it is not improbable that there are more species of this order contained in the comparatively narrow belt of land comprised between the tropics of America, than the same latitudes produce from the west coast of Africa eastwards to the remotest of the Pacific islands.

Except St. Helena, there is no part of the globe whose *Compositæ* are so nearly unexceptionably different from those of any other country as the Galapagos. Of the 17 genera in which they are included, 5 are widely different from any previously known; and of the species, 28 in number, 23 are peculiar and 5 are tropical weeds, readily introduced by man, and found in the colonized islets alone; whence their origin is suspicious. Of the 12 remaining genera, 9 are almost exclusively American, and the remainder of more general distribution. The last circumstance connected with this order

to which I shall allude, is the gummy exudation for which the shrubby *Scalesiæ* are conspicuous, and which is equally a characteristic of some of the St. Helena *Compositæ*. The species in both instances are inhabitants of arid spots, fully exposed to the sun of the torrid zone, which together seem favourable to the copious secretion of gums and gum-resins in various parts of the world.

Leguminosæ.—This order is second only to the last in number of species, of which there are 24 contained in the various collections, but differs conspicuously in its proportion of novelty, there being no peculiar genus, and only 7 species which are not found on the adjacent continent. Of all the large natural orders of flowering plants, the *Leguminosæ* contain by far the largest amount of universally diffused species, including very many of the littoral weeds of the tropics. Observation proves that this is in a great measure due to the transporting power of water, for neither do the seeds of the dispersed species bear winged appendages, nor are they of such a size as renders it probable that they are carried by aërial currents. The ubiquitous species possess, on the other hand, remarkable powers of resisting the effects of time and exposure, besides a vegetative power that enables them to overcome obstacles in the soil and climate of the locality they are transported to; qualities which the *Compositæ* probably possess in a very limited degree, for we see their feathery pappus to have had little effect in spreading the majority of the individual species beyond any but very narrow limits.

Of the Galapageian genera only *Dalea* and *Galactia* are exclusively American, and all but the 7 species mentioned above are common tropical species, particularly in the West Indian islands.

Euphorbiaceæ form a very large proportion of the Galapageian Flora, consisting of 18 species, included in the tropical genera *Acalypha, Croton, Euphorbia* and *Phyllanthus*. They form $\frac{1}{11}$ of the Phænogamia, very much exceeding the proportion for the tropics of the new world, which is stated by Baron Humboldt as $\frac{1}{35}$, or of Western Africa, which Mr. Brown gives as $\frac{1}{28}$. In amount of peculiar species this order here ranks next to *Compositæ*, $\frac{5}{6}$ of the whole belonging to species very distinct from those of other countries; the remainder are common West Indian or Southern United States plants.

In the prevalence of peculiar *Euphorbiaceæ* and *Rubiaceæ*, this group has

features in common with the similarly barren island of Ascension, where almost the only Dicotyledonous plants are one of *Rubiaceæ* and a prostrate *Euphorbia*, allied to, and of the same habit as, the Galapageian ones. The *Aristida* too of Ascension, which is there the only abundant grass, is represented here by two congeners which occupy similar situations. This feeble though decided analogy existing between the vegetation of arid volcanic islets in opposite oceans is very singular, and is a feature analogically repeated as it were by the two moister islands of Juan Fernandez and St. Helena, which possess very similar and closely-allied peculiar forms of *Wahlenbergia*.

The shrubby Crotons of this group are no doubt conspicuous features in the vegetation; the other species of the order are mere weeds.

RUBIACEÆ.—An order largely represented, including upwards of $\frac{1}{15}$ of the flowering plants, whilst of the tropical Flora of the neighbouring continent they form but $\frac{1}{29}$, and of that of the whole globe $\frac{1}{23}$. The amount of peculiarity is also very large, though (as in *Euphorbiaceæ*) the new species are found under a very few genera; in this case 11 of the 15 are such, belonging to three genera, of which one, *Borreria*, alone contains 8. This last and *Euphorbia* contain the majority of the weeds of the Galapagos, and are further the two largest Phænogamic genera in the group.

It is singular to remark to what different genera of plants various islands are indebted for their greatest peculiarity, and how often it is the case that such genera give a character of individuality to the scenery. This is effected in the Galapagos by covering the lower lands with *Euphorbia* and *Borreria*, whilst the large genera *Scalesia*, *Croton* and *Cordia* give the conspicuous features of the vegetation of the higher regions. In like manner in Juan Fernandez and St. Helena the most conspicuous, which are also the largest genera, are of *Compositæ* and *Campanulaceæ*; and in the Sandwich Islands *Goodeniaceæ* and *Lobeliaceæ*; while in the Society group, on the other hand, out of upwards of 200 genera, *Piper* is the only one containing as many as 3 peculiar species. This leads me to another remark, that the greater the amount of peculiarity an insular flora presents, the closer relationship do the species it contains bear to one another. This is best shown by observing the proportion that the species bear to the genera, which more frequently contain several species in the peculiar than in the borrowed floras. This may be stated in another

form, thus: the more an island is indebted to a neighbouring continent for its vegetation, the more fragmentary does its flora appear, migration being effected by the transport of isolated individuals, generally in nowise related, while an independent flora is generally made up of groups, the lowest order of which we call genera. Hence the Coral Islands, whose flora is wholly borrowed, seldom have two species belonging to the same genus; as Keeling Island, for instance, on the west, and Malden Island to the eastward of the Pacific, in both of which the genera are to the species as 1 : 1; or the Society group, which presents so little novelty, and whose proportion of genera is as 1 : 1·3. In the Sandwich Islands, on the other hand, our very imperfect materials give a proportion of 1 : 2; the Galapagos of 1 : 1·7; and St. Helena about the same.

In the abundance and peculiarity of *Rubiaceæ*, the Galapagos may be compared with the Sandwich group, which contain 18 species of this order unexceptionably peculiar, and all belonging to genera even confined to those islands. None of the Galapageian species belong to any but very common genera*.

Of SOLANEÆ there are 13 species, a considerable number in proportion to the extent of the Flora, but almost the whole of them derived from the neighbouring coast. Only one, a species of *Acnistus*, is previously undescribed, except the *Dictyocalyx*, which is however a native of the shores of Peru. *Solanum nigrum* is the only flowering plant common to Great Britain and the Galapagos, except *Verbena officinalis* and *Calystegia Soldanella*; all are found in most intervening shores.

The AMARANTHACEÆ are the only other family of flowering plants appearing to demand a particular notice, for their abundance and novelty are without a parallel in any tract of land of equal extent. This is partly to be accounted for by their being partial to the immediate neighbourhood of the sea, but is more due to the position of the Galapagos being near to America, where, according to Martius, they attain their maximum. Littoral and widely diffused as many plants of this order are, we do not find one of the ubiquitous species in this group; and indeed, except two belonging to the genus *Ama-*

* In respect of *Rubiaceæ*, the vegetation of the Sandwich group has no analogy with that of any other islands. The Society Islands contain many more species, but all belonging to Asiatic genera. Even the specifically peculiar *Rubiaceæ* of St. Helena and Ascension have Cape congeners, and there is no genus of this order confined to Juan Fernandez.

ranthus itself, and these hardly identical with previously described plants, there is no species common to the Galapagos and adjacent continent. The *Amaranthaceæ* form $\frac{1}{23}$ of the Phænogamous Flora of the Galapagos, which is a ten-times greater proportion than the order bears to the vegetation of the whole globe.

FILICES.—The very variable characters of the species belonging to this order and their geographical limits being very far from defined, I hesitate in considering the data they afford as of equal value with those obtained from the Phænogamic Flora. The number found in the Galapagos, 28, is certainly small, considering how numerous they are on Cocos Island, a very few degrees to the north, and on Juan Fernandez to the south. Their scarcity, together with the absence of any Tree-fern, is no doubt due to the dryness of the land and atmosphere, though the upper regions, where an epiphytical orchideous plant flourishes, are to all appearance sufficiently humid for their wants. Judging from botanical grounds of the humidity of a climate, we must be guided by the prevalence of Ferns or their scarcity; and when the nature of the species belonging to this order is considered, it will be found that many of the Galapageian species are common to drier parts of and arid places in the tropics, such as *Marginaria incana*, *Litobrochia pedata*, *Polystichum coriaceum*, *Nephrodium molle* and some others; whilst the extensive genera *Hymenophyllum* and *Trichomanes* are entirely wanting, together with the whole order of *Lycopodiaceæ*, including that most frequent of all tropical plants, *L. cernuum*, L. A small proportion, equalling $\frac{1}{5}$ of the whole, are new; the remainder are the common plants of the West Indies and South America.

The Galapagos are further the only tropical group of islands of any extent which contain no *Dicksonieæ* and *Cyatheæ*, except the Cape Verds; a further evidence of the aridity of the climate.

The remaining orders are all small and demand little notice; they may however be enumerated under three heads, according to the distribution of the Galapageian species they contain:—

1. Orders, all the Galapageian species of which are common to both the old and new world, are:—*Menispermeæ* 1; *Cruciferæ* 1; *Caryophylleæ* 2; *Sapindaceæ* 1; *Zygophylleæ* 1; *Rhizophoreæ* 1; *Scævoleæ* 1; *Plumbagineæ* 1; *Commelineæ* 1.

2. Orders whose Galapageian species are American solely:—*Xanthoxyleæ*, a West Indian species; *Simarubeæ*, the West Indian *Castela Nicholsonii*; *Umbelliferæ*, 2 *Helosciadia*; *Lobeliaceæ*, the Mexican *L. Xalapensis*; *Apocyneæ*, the West Indian *Vallesia glabra*, Lk.; *Plantagineæ*, the Chilian *P. tomentosa*; *Phytolacceæ*, *P. decandra*; *Chenopodiæ*, *Cryptocarpus* and *Boussingaultia*; *Hypoxideæ*, *H. erecta*, Willd.

3. Orders containing only such Galapageian species as are confined to that group:—*Polygaleæ*, 2 species; *Byttneriaceæ*, a new *Waltheria*; *Celastrineæ*, a new plant of the American genus *Maytenus*; *Rhamneæ*, a *Discaria* allied to a Chilian species; *Myrtaceæ*, a *Psidium*; *Cucurbitaceæ* 2; *Cacteæ*, a *Cereus* and *Opuntia*, the latter one of the largest of the order; *Passifloreæ*, 3 new species allied to West Indian congeners; *Loaseæ* 1; *Portulaceæ*, a new genus and a new species of *Sesuvium*; *Loranthеæ* 2; *Piperaceæ*, 3 very distinct species of *Peperomia*; *Orchideæ*, an epiphytical *Epidendrum*.

4. The other orders are:—*Malvaceæ* 4, including 2 *Sidæ*, considered as new, but possibly altered states of continental species; *Convolvulaceæ*, 4 species, two belonging to the first of the foregoing divisions, one to the second, and three, a *Cuscuta* and two *Ipomœæ*, to the third. *Verbenaceæ* 9; two belonging to the first division, and the rest (except possibly two which are indeterminable) to the second; *Labiatæ* 5, one to the first division, three to the second and one to the third; *Scrophularinæ*, the ubiquitous tropical *Scoparia dulcis*, and an indeterminable, probably new plant; *Borragineæ*, a new genus, *Galapagoa*, with two species, the wandering *Heliotropium Curassavicum*, two new *Tournefortiæ* and two South American plants; *Acanthaceæ*, *Dicliptera Peruviana*, and a new *Tetramerium*; *Nyctagineæ*, an undescribed *Pisonia*, and four very widely distributed *Boerhaaviæ*; *Urticeæ* 5, all common South American plants, one of which, *Pilea peplöides*, is also found in the old world.

The general results of this summary of the orders, and of the comparison of these and of the species with those of the continent of South America and the other islands, which in peculiarity of flora for their size may be compared with the Galapagos, (as New Zealand, the Sandwich group, Juan Fernandez and St. Helena,) are, 1st, That there are points of agreement inexplicable in our state of knowledge; such are the peculiarities of *Rubiaceæ* and of frutescent and arborescent *Compositæ*; which is rendered the more remarkable from

the species and genera of those orders contained in one group of islands having little or no relation with those of the others. 2ndly, That the chief points of difference are explicable, and owing chiefly to the relations the islands bear to the nearest continents, and to the nature of the soil and climate, &c.; such are the absence of Ferns, and the peculiar forms of *Compositæ* and *Rubiaceæ*, and other orders having their nearest allies on the neighbouring continents. 3rdly, The smallest amount of novelty will be found amongst the more perfect plants, if such be so considered as possess a double floral envelope and polypetalous corolla, including the *Thalamifloræ* and *Leguminosæ*, whilst the greatest amount of new species exists in the lower orders, as *Amaranthaceæ* and *Piperaceæ*, or in the incomplete genera of *Euphorbiaceæ*, and in the *Compositæ*. On the other hand, there are somewhat fewer peculiar and new plants amongst the *Monocotyledones* than the *Dicotyledones*; and the amount of novelty amongst the Ferns is small in comparison to the higher orders.

II. In this second part of the essay I propose to treat of the Flora of the Galapagos as divisible into two types: these are the West Indian (including Panama), to which the plants common to other countries and the dubious species almost universally belong; and the Mexican and temperate American type, or that under which the great majority of the peculiar species will rank. Those which I have called dubious species consist of a few plants which more properly belong to neither of these divisions, including all such as are so nearly allied to continental forms as to appear scarcely distinguishable specifically, or if distinguishable, dependent on characters which, though sufficiently obvious, are extremely liable to variation; such are possibly altered forms of introduced species, dependent on the combination of circumstances which they are exposed to in the Galapagos for the appearances they assume: such plants are noticed in the descriptions given of the species, and it is sufficient to state here, that they nearly all belong to the West Indian type.

The species which I have referred to the Mexican type (from the affinities of the remarkable *Compositæ*) include those whose nearest allies belong to Mexico or the higher levels in Columbia, or to the lower latitudes of the Southern United States, California or Chili; unlike those of the West Indian type, they are all specifically entirely distinct from their continental congeners, and are about 45 in number, belonging to such genera as *Discaria*, *Dalea*, *Phaca*,

Galactia, *Opuntia*, *Cereus*, *Viscum*, all the new genera of *Compositæ*, besides *Aplopappus* and *Hemizonia*, species of *Ipomœa*, *Psidium*, *Cordia*, *Tournefortia*, *Croton*, *Peperomia*, *Epidendrum*, *Eutriana* and *Aristida*. Those belonging to the Savannah lands of the United States, or dry parts of the tropics rather than the damp, hot, low grounds, are 24 (out of the 45) of *Polygala*, *Galapagoa*, *Elaterium*, *Sicyos*, 7 species of *Borreria*, 6 of *Acalypha*, and 5 of *Euphorbia*, besides a *Brandesia* and *Alternanthera*. Thirteen from the following genera, though very distinct, are exceptional, as being allied to plants of the same range as those included in the West Indian type; they belong to *Desmodium*, *Phaseolus*, *Acrolasia*, *Pleuropetalum*, *Pisonia*, *Frœlichia*, 3 species of *Bucholtzia*, *Mariscus*, *Cyperus*, and *Paspalum*.

If, on the other hand, the species common to other parts of the world, including those which are possibly allied, be contrasted with the above, they will be seen to belong to a different type of vegetation, being inhabitants of hot, low and marshy countries, or purely littoral species; they amount to 120, 88 of which are natives of the West Indies or Southern United States. Again, of these, 35 are common to the old and new world, affording no evidence of botanical relationship to any country; whilst the following 26, some of them remarkable species, are particularly prevalent over the Caribbean Sea, Gulf of Mexico and Galapagos.

Paritium tiliaceum.	*Spermacoce tenuior.*
Sida rhombifolia.	*Wedelia frutescens.*
Gossypium purpurascens.	*Spilanthes Acmella.*
Malachra capitata.	*Convolvulus alsinoides.*
Turnera ulmifolia.	*Lantana recta.*
Xanthoxylum pterota.	*Varronia dasycephala.*
Mimosa asperata.	*Hyptis capitata.*
Parkinsonia aculeata.	*Heliotropium Indicum.*
Poinciana pulcherrima.	*Phyllanthus obovatus.*
Tephrosia littoralis.	*Urtica Canadensis.*
Rhynchosia reticulata.	—— *divaricata.*
—— *minima.*	*Poa pilosa.*
Chiococca racemosa.	*Digitaria serotina.*

Of the remainder of the 120, the following I have assumed to be confined

to the west of the American Cordillera and the Galapagos, or only to cross to the eastward on the lowest part of Mexico.

Drymaria glaberrima.	*Verbena littoralis.*
Acacia Cavenia.	——— *polystachya.*
Cassia picta.	*Plantago tomentosa.*
Baccharis pilularis.	*Cryptocarpus pyriformis.*
Dictyocalyx Miersii.	*Boussingaultia baselloides.*
Clerodendron molle.	*Mariscus Mutisii.*

Again, these 120 are of such common occurrence over a large extent of coast, that their introduction into the Galapagos by causes now in operation can hardly be doubted. Presuming that such is the case, it may not be out of place to trace here the course of migration, the means by which it may have been effected, and the facilities for transport presented by the individual species.

The position of the group between the Pacific Islands and America, points to these as the only mother-countries from which plants could have migrated. We have seen that many are common to the latter country; but as at least 15 species are also found in the South Sea Islands, it may be supposed that there has been migration from that quarter, especially as many plants are dispersed in a very remarkable manner over every group in the Pacific, establishing themselves very soon after the formation of any new land, and whose further extension to the Galapagos might have been deemed possible*.

There are 16 species found both in the Galapagos and South Sea Islands, which is nearly the half of what are common to the latter locality and America,—a very large proportion; but as they are unaccompanied by any

* The species to which I allude as being so very prevalent over the tropical South Sea Islands, are:—

Oxalis corniculata.	*Scævola Kœnigii.*
Dodonæa viscosa.	*Cordia orientalis.*
Lepidium piscidium.	*Pisonia mitis.*
Tephrosia piscatoria.	*Achyranthes velutina.*
Guilandina Bonduc.	*Aleurites triloba.*
Sesuvium portulacastrum.	*Pandanus odoratissimus.*
Metrosideros polymorpha.	*Cocos nucifera.*
Portulaca oleracea.	*Davallia solida.*
Adenostemma viscosum.	*Phymatodes vulgaris*;

together with several other Ferns, some *Cyperaceæ* and *Graminæ*.

Polynesian species not found in America, it is perhaps the more probable that they migrated from the eastward into the Galapagos*.

The means of transport which may have introduced these plants are, oceanic and aërial currents, the passage of birds, and man.

To the first of these divisions the majority of the littoral species may be referred; they are about 20 in number, chiefly such as are common to most warm latitudes, as :—

Cissampelos Pareira.	*Avicennia tomentosa.*
Tribulus cistoides.	*Scævola Plumieri.*
Tephrosia littoralis.	*Ipomæa maritima.*
Rhizophora Mangle.	*Calystegia Soldanella.*
Verbena littoralis.	*Heliotropium Curassavicum.*

To the non-littoral species, also possibly introduced by marine currents, belong the greater part of the remaining *Leguminosæ*, the *Borragineæ*, *Verbenaceæ* and *Solaneæ*. These and the above have seeds too large for probable transport by winds; they possess no means of attaching themselves to birds, &c., whilst the indurated seed-coats of some, and the exalbuminous embryos of many, probably aid them in resisting for some time the effects of salt water.

It is only such species as have small seeds, or in which these are furnished with wings or other appendages, that offer aids to the transport by winds; they are few in number: such are *Gossypium*, *Baccharis* and *Ageratum*, the caryopsides of which last are, singularly enough, *in this group only* deprived of pappus. *Lobelia Xalapensis*, *Scoparia dulcis* and the *Urticeæ* have very small seeds.

That birds are active agents in transporting species may be presumed from

* The more clearly to show the discrepancy between the Floras of the Pacific and Galapagos, I may mention that I have examined that of Malden Island, the nearest of the Tropical Polynesian Islands to the Galapagos. Most of its species are very abundant over all the tropical South Sea Islands, and none are absolutely peculiar: they are, 1. *Phymatodes vulgaris*; 2. *Davallia solida*; 3. *Eragrostis*, sp.; 4. *Guettarda*, sp.; 5. *Euphorbia ramosissima*; 6. *Achyranthes velutina*; 7. *Boerhaavia*; 8. *Lepidium piscidium*; 9. *Sida*; 10. *Oxalis corniculata*; 11. *Tribulus cistoides*; 12. *Crotalaria*; 13. *Portulaca*; 14. *Talinum patens*; 15. *Coprosma*, sp.; of which only the *Tribulus*, and perhaps the *Portulaca*, are Galapageian, whilst even the Ferns and 8 of the 15 genera are not so. This, coupled with the fact stated above, that there is no species an inhabitant of the Galapagos and the old world, that is not equally found in the new, are conclusive against the probability of any direct migration from the westward.

the very considerable number of widely diffused plants which are admirably adapted for availing themselves of this means of transport; though, on the other hand, the exquisite care with which sea-fowl plume themselves must not be overlooked, nor the slender chance there is of a seed remaining attached to a body subjected to such violent motion and constant immersion as these birds undergo. The plants which may have been thus introduced are species of *Tribulus, Siegesbeckia, Nicotiana, Dicliptera, Plumbago, Pisonia, Boerhaavia, Poa ciliaris* and *Setaria Rottleri*: all belonging to this section are ubiquitous plants throughout the tropics.

As no land-bird is common to the Galapagos and mainland of America, this group is deprived of one very frequent means of transport,—the stomachs of birds, which often receive seeds as the food, especially of the migratory species; these pass undigested from them in a locality far removed from that where they were collected, not only with unimpaired vitality, but with the process of germination accelerated.

Man is the last agent to which I alluded: that he has been already active is very perceptible from the fact, that Charles Island, the only colonized island, contains the smallest proportion of peculiar plants, and numerically far the most of these common to and probably introduced from the coast with cultivation.

If the non-peculiar plants of the Galapagos then have been introduced from the continent of America, it is the currents and winds that we must regard as the agents; of these, the winds are steady south-east trades, blowing from the coast of Peru, by which the West Indian species cannot have been carried. The currents are more variable; and to these I would direct attention, and have brought together all the information on this subject I could command, from the voyages of the English and French in the seas between the Galapagos and American shores.

The principal oceanic current is a branch of the Antarctic or Southern Polar; it is a large body of cold water, which flows northwards from the icy regions to the equator, parallel to, or perhaps impinging on the west coast of South America, and becoming deflected at its northern limit near the Galapagos, where its course is between W. and N.W., flowing with so great rapidity between some of the islands as to render much interchange of seeds between such by its means highly improbable. To its influence the canes, bamboos and palm-nuts,

mentioned by Colnett as being drifted on the south-east coasts of the Galapagos, are perhaps, though remotely, due; and to its agency may be ascribed the introduction of the following littoral Peruvian and Chilian plants:—

Vigna Owyhensis.	*Lycopersicum Peruanum et pimpinellifolium esculentum.*
Acacia Cavenia.	*Verbena littoralis.*
Nicotiana glutinosa.	——— *polystachya.*
Dictyocalyx Miersii.	*Plantago tomentosa.*

Had this body of water flowed along more fertile coasts than the desert shores of Peru, or received any large rivers in its course, the Flora of the Galapagos might have presented a very different appearance. On the other hand, let it be borne in mind, that the sterility of the coasts of this archipelago is peculiarly unfitted to the propagation of any but the most vigorous weeds of the tropics; had it been otherwise, it cannot be doubted that the palms, canes and bamboos (which are probably originally from the Guayaquil river, and taken up by the north edge only of this current) would have vegetated here as well as in Cocos Island, only 300 miles to the north, whose vegetation is of tropical luxuriance*.

Another current, that by which the West Indian plants are probably introduced, is one which, though not laid down in any chart, appears from the observations of Captain Fitzroy to flow from the Bay of Panama, on the north-east of the Galapagos, and mingle its waters with the polar current; its origin is in the heated waters of that gulf; and the evidence of its visiting the Galapagos rests not only on the presence of so many species of plants, but on the fact, that the currents which wash the shores of the northern islands of the group are sometimes 10 degrees warmer than the south polar current at the southern islands; whilst the intervening space is far too narrow to admit of the supposition that the difference is owing to local causes. This current is doubtless a very partial one, but its effect is powerful, rendering the climate of one part of the group very different from that of the other,—a difference which is accompanied by certain changes in the vegetation.

There is one other point demanding attention, which relates to the crossing

* The presence of this current is of the highest importance in effecting the distribution of antarctic Algæ, for its cold waters are the means of carrying far into the tropics of this meridian, species which in other longitudes are entirely confined to very high latitudes.

of the common West Indian forms of vegetation from the east to the west coast of South America. So powerful a check to migration are the Andes, that almost throughout their whole length there is no mingling of the Floras of the east and west sides of America. The narrow Isthmus of Panama offers the only exception to this chain being continuous in the tropics; there the land is described as low and flat; and Mr. Hinds, in particularly alluding to this circumstance, states, that consequently the mahogany crosses from the Atlantic to the Pacific side. By this means, many species which prevail over the Mexican and Caribbean Seas from the Bahamas to Honduras, are further extended, first, for a short distance west to the Pacific, and then along its shores to Guayaquil on the south, and probably to California on the north, their further extension being probably checked by the dry plains of Peru on the one hand, and the changes in the climate of California on the other. Seeds of these are always liable to be exposed to the influence of that current, which I have noticed as flowing to the Galapagos from the Gulf of Panama.

I shall conclude this part of my essay with pointing out the adaptation of the several plants for transportation, under the natural orders to which they severally belong.

Menispermeæ.—*Cissampelos* presents a hard inner coat of the pericarp. Albumen scanty, fleshy.

Cruciferæ.—*Senebiera didyma*, the only Galapageian species, forms an exception to the general rule, that the plants of this order are impatient of transport from the oily nature of their cotyledons; it is, as DeCandolle remarks, probably a native of Buenos Ayres, whence it has been diffused over nearly all the globe, and is continuing to spread.

Curvembryosæ.—An artificial group, sufficiently natural however for the present purpose. Seeds very minute in some, as *Drymaria* and *Mollugo*. The *Chenopodeæ*, *Phytolacceæ* and *Portulaceæ* have a constitutional predilection to salt water. Albumen farinaceous in the greater part of the Galapageian genera.

Malvaceæ.—Indurated pericarp of many. The floral envelopes of *Malachra* are well-adapted to stick to various means of transport.

Sapindaceæ.—Crustaceous testa and exalbuminous seed of *Cardiospermum*.

Zygophylleæ.—*Tribulus cistoides* offers singular advantages for transportation in its woody seed-vessels, their spines beset with reversed prickles, and exalbuminous seeds.

Xanthoxyleæ.—Osseous testa of *Xanthoxylum*.

Simarubeæ.—*Castela* has a crustaceous endocarp and scanty albumen.

Leguminosæ.—Generally firm testa, exalbuminous seeds, and great power of some to retain vitality.

Rubiaceæ.—The densely corneous albumen of many may afford a sufficient protection to the seed.

Umbelliferæ.—*Helosciadium laciniatum* is one of the few species enjoying a wide range, for which I can offer no explanation.

Compositæ.—Exalbuminous seed. Pappus of *Baccharis* and adhesive pubescence of *Siegesbeckia orientalis.*

Lobeliaceæ and *Scrophularinæ.*—Very minute seeds of *Scoparia dulcis* and *Lobelia Xalapensis.*

Rhizophora, Avicennia and *Scævola.*—These all have a predilection for salt water, and constitutional power in the embryo of resisting its destructive effects. *Scævola* has a hard putamen and scanty carnose albumen; the other species are exalbuminous.

Apocyneæ.—*Vallesia* I believe to be a salt-marsh or sea-side plant; it has a scanty albumen.

Convolvulaceæ.—These have a scanty mucilaginous albumen. Two of them, *Ipomæa maritima* and *Calystegia Soldanella,* are sea-side species, with particularly wide ranges.

Solaneæ.—Small seeds and adhesive glands of *Nicotiana glutinosa*; indurated osseous testa of *Dictyocalyx, Solanum* and *Lycopersicum.*

Verbenaceæ.—Exalbuminous embryo and osseous endocarp of *Clerodendron* and *Lantana.*

Labiatæ, Cordiaceæ and *Borragineæ.*—Nucumentaceous pericarps and very scanty albumen. *Cordia* and *Borragineæ* are exalbuminous.

Acanthaceæ.—Exalbuminous hooked seeds.

Plantagineæ.—Very dense corneous albumen.

Plumbagineæ and *Plantagineæ.*—Viscid glands on calyx, and hooked prickles of some *Pisoniæ.*

Euphorbiaceæ and *Urticeæ.*—Non-peculiar species of these may have been introduced through the agency of man into Charles Island.

Hypoxideæ and *Commelineæ* offer no apparent facilities for the extraordinary range of the two species that represent these orders.

Cyperaceæ.—These have some facilities for adhesion to foreign substances, and the firm nature of the pericarp, further covered by the coalescing scales of the perianth, are protections.

Gramineæ.—The ciliated glumes of *Poa ciliaris* and the awns of *Setaria Rottleri* are the only very evident aids to migration which I can adduce. The resistance of the seed to the action of salt water must be very slight indeed.

Cryptogamia.—The excessive minuteness of the sporules in this great class, together with the sporadic appearance of these where they are most minute, and the sudden development of others in suitable situations, leave little doubt that their diffusion by the winds is a never-ceasing though invisible operation.

From the above it appears, that of the species presumed to be introduced into the Galapagos through various agencies, about 40, or nearly so, have exalbuminous seeds; and of the 50 albuminous-seeded ones, the majority have that substance dense or carnose; some farinaceous, but only two or three oily. These results agree to a considerable extent with what the gardener practically deduces, from the success or failure which attends the planting of seeds from foreign climes. The *Leguminosæ* and *Solaneæ*, the very two orders the Galapagos' proportion of which shows so undue an amount of continental American species, are in miscellaneous collections of seeds, those which best retain their vitality during long voyages.

III. The last feature in the Galapageian Flora to which I alluded is, that the several islets are tenanted for the most part by different plants; this difference between the Florulæ is as decided as that which exists between the botany of the whole coast and that of America, or even more so in proportion, if it be remembered how very similar the islets are in climate and geological structure, and how close to one another in geographical position.

Were this peculiarity effected only by those species which may have come from the continent, it would have admitted of some explanation, so capricious are the elements which regulate the interchange of species, and so uncertain in their effects even when apparently most uniform in their action. But in this case, the difference is most marked in the distribution of the species that are Galapageian only, the individuals of which are not common to every part of the archipelago, but for the greater part confined each to one solitary islet; only 13 of the 128 peculiar flowering plants and ferns having been found hitherto on two of the four whose Flora we know, two upon three of the islets, and but one upon all four. On the other hand, the amount of difference, though great numerically, is as regards its nature restricted within very narrow limits, the plants of one island being represented in others by similar though not identical species, producing a similarity in all general features combined with a difference in details.

Such well-marked and at the same time very narrow limits to the dispersion of nearly 130 species, is probably nowhere to be met with but amongst the Galapagos, and, wonderful though it must appear, it is still very much the accident of their birth-place; it is in a great measure due to the want of means

of intercourse, especially atmospheric storms, between the several islets, and argues no physical peculiarity or want of vigour in the species themselves. Supposing all the species now inhabiting the Galapagos to be collected on a continuous surface, equalling in area the aggregate of the islets forming that archipelago, then would the Flora lose much of its characters; the strife with its neighbours for position, which marks all stages of the life of any two or more contiguous plants, would terminate in a few replacing the many, and the introduced species bearing a greater proportion to the indigenous, whilst the individuality of the Flora would thus be lessened in degree or wholly destroyed. It must be admitted, that the first steps towards ensuring the continuance of many species in a given area, are to isolate them, and to cut off the means of migration; exactly as in a garden the plants are protected from encroachment mechanically, and the seeds of the more volatile collected betimes, to prevent a like effect being naturally brought about.

Though, however, this in some degree explains why the florulæ of the islets should be distinct in character, it can give no clue to the representation of species amongst them; which representation, whether it be regarded in the light of the whole group bearing the imprint of America, with but few of the productions of that continent, or of the several islets each individually distinct combining to form an harmonious whole, is a mystery which it is my object to portray, but not to explain; and I shall proceed to show the amount of this difference, and its relation to the physical features of the islets.

The following table shows the amount of peculiarity in each island of flowering plants and ferns, and the proportion confined to itself; those common to itself and one or more other islets; and such as are found on the American continent.

Name of island.	Total number of species.	Confined to Galapagos, *i. e.* total excluding those common to America.	Absolutely peculiar to the islet.	Confined to the group, but found likewise on other islets.
Charles Island	96*	47	32	13
James Island	100	48	38	10
Albemarle Island ..	47	27	20	7
Chatham Island ..	40	21	17	4
Whole group	253	123		16

* I have excluded seventeen species from the flora of this islet, as being almost certainly introduced with cultivation.

Hence it appears that James Island is the most rich in species, as might be expected from its central position in the archipelago, and from its containing very elevated land. Albemarle, though the largest, is on the other hand singularly deficient in individuals and kinds, and, as well as Chatham Island, is described as peculiarly sterile and arid. Charles Island, the smallest of all, is almost the richest in species; and though it does not follow that it is hence peculiarly productive for man, we cannot but couple its varied flora with the fact, that it is the only one hitherto colonized.

With regard to the relative amount of peculiar species possessed by each islet, it would seem to be affected by its climate, and may be thus expressed:

Charles Island has 22 species common to other islets, which are as 1 : 4·4 of its whole flora.
James Island has 23 species common to other islets, which are as 1 : 4·3 of its whole flora.
Albemarle Island has 18 species common to other islets, which are as 1 : 2·6 of its whole flora.
Chatham Island has 17 species common to other islets, which are as 1 : 2·4 of its whole flora.

This accordance of the proportions obtained for the two fertile islets and of those for the two sterile is very striking, and especially as they are obtained from collections made by six different and wholly independent voyagers, and indicate that sterility of soil has proved an important agent in preventing the confusion of the floras, and also shows how few are the agents of migration; for Albemarle being the westernmost, and Chatham the easternmost of the whole archipelago, they would otherwise have shown very different proportions.

If we analyse the florulæ still further, and seek to know how far each has profited by immigrants from America, a similar difference will be found between the fertile and the sterile islets.

Charles Island contains 49 American plants, which are to whole flora as 1 : 1·9.
James Island contains 52 American plants, which are to whole flora as 1 : 1·9.
Albemarle Island contains 20 American plants, which are to whole flora as 1 : 2·3.
Chatham Island contains 19 American plants, which are to whole flora as 1 : 2·1.

Whence it appears that the fertile islets, though in position not more favourably placed for receiving the plants of the American coast, still show, not only numerically but proportionally, their aptitude for supporting a richer flora than that which is peculiar to the group.

The nature of the collections is hardly such as to warrant the drawing any

further conclusions, the numbers representing the relationship of the peculiar and non-peculiar plants of each islet to one another being small. There is however one point which demands a notice, and that is, the obvious relation between the distribution of the peculiar species over the four islets in question and the direction of the easterly current. Chatham Island being situated east of the group, it follows that the current can never transport insular species to it: on the other hand, Albemarle, on the west, lies directly in its course. Now, excluding the American plants altogether, we have the following evidence of the western islands being peopled by colonists from the eastern; shown by the proportion each islet contains of the Galapageian species found on others.

Chatham Island; its Galapageian species found on other islets are to whole florula as 1 : 5·0.
James Island; its Galapageian species found on other islets are to whole florula as 1 : 4·8.
Albemarle Island; its Galapageian species found on other islets are to whole florula as 1 : 3·9.
Charles Island; its Galapageian species found on other islets are to whole florula as 1 : 3·1.

The amount of difference between the islets is, as I have stated above, mainly specific, and is apparent in no less than fifty-eight of the peculiar species of the archipelago, which thus represent one another, and for whose names I would refer to the catalogue of the species already before the Society.

The above remarks I have confined to the most salient features of the Galapageian Flora, and such as I would hope may not be materially affected by future investigations in this most interesting archipelago. There are others which appeared prominent, it is true, but which required for their confirmation more ample collections than have hitherto been formed, and these I have suppressed until materials for their establishment shall be forthcoming*.

Royal Gardens, Kew, November 1846.

* The following described species, collected by the late T. Edmonstone, Esq. in Charles Island, together with one undescribed found by Mr. Darwin in Chatham Island, were omitted in my enumeration, but are included in the foregoing remarks.

1. *Digitaria serotina*, Michx.—2. *Alternanthera radicata*, n. sp. (See below).—3. *Heliotropium Indicum*, L.—4, 5. *Clerodendron*, species 2 (exemplaria manca).—6. *Hyptis capitata*, Jacq.—7. *Varronia dasycephala*, Desv.—8. *Nicotiana*, sp.—9. *Physalis*, sp.—10, 11. *Solani*, species 2.—12. *Calystegia Soldanella*, R. and S.—13. *Wedelia frutescens*, Jacq.—14. *Spilanthes Acmella*, L.—15. *Eupatorium*? sp. —16. *Baccharis pilularis*, DeC.—17. *Compositæ*.—18. *Galactia*, n. sp.—19. *Poinciana pulcherrima*, L.

—20. *Parkinsonia aculeata*, L.—21. *Acacia*, sp.?—22. *Piptadenia*? sp.—23. *Mimosa asperata*, L.—24. *Turnera ulmifolia*, L.—25. *Sida rhombifolia*, L.—26. *Paritium tiliaceum*, St. Hil.

ALTERNANTHERA RADICATA, *Hook. fil.*; radice validâ lignosâ apice 3–5-cipiti, foliis stellatis recurvis lanuginosis teretibus carnosis elongato-linearibus integerrimis obtusis medio supernè canaliculatis, ramis floriferis radicalibus abbreviatis lanuginosis apice oligocephalis, capitulis globosis, perianthii foliolis oblongis obtusis emarginatis, antheris 2, stigmate bipartito.

Hab. Chatham Island, *C. Darwin, Esq.*

Radix pro plantâ maximâ, elongata, lignosa, crassitie pollicis, supernè divisa. Folia perplurima, patenti-recurva, 1½–2 unc. longa, teretia, 1 lin. diametr., basi densè lanuginosa, ceterùm arachnoideo-tomentosa. Caules floriferi (seu scapi) foliis breviores, validi, supernè bracteati, simplices v. divisi, plerumque monocephali; bracteis 3–4, capitulo brevioribus, lanuginosis. Capitula alba, ⅓ lin. lata, multiflora; floribus compressis lanâ subscariosâ immersis, 1½ lin. longis. Bracteolæ floribus paulò longiores, laterales dorso acutæ, postica concava. Perianthii foliola enervia. Tubus stamineus cyathiformis, brevis; filamentis fertilibus 2, lateralibus, dilatatis, sterilibus nullis. Ovarium orbiculare, compressum. Stigmata brevia.

The root of this species is much larger than that of *A. subscaposa*, with which it agrees in habit. The foliage will distinguish it from that, and from every other described species.—*July* 1847.

ERRATA.

Page 194. *No.* 105 *should be* PLANTAGO TOMENTOSA, *Lam.*?

— 195. *Before No.* 114 *dele* RUBIACEÆ.

— 229. CASTELA GALAPAGEIA, *Hook. fil.*=varietas inermis *C. Nicholsonii*, Hook. *The genus should be referred to* Simarubeæ.

CHRISTIANI GODOFREDI NEES AB ESENBECK,

ACADEMIAE CAESAREAE LEOPOLDINO-CAROLINAE NATURAE CURIOSORUM PRAESIDIS,

AD SOCIOS CUIUSQUE GRADUS ET ORDINIS LITTERAE,

QUIBUS

SUPREMI PROTECTORATUS,

A

FRIDERICO GUILELMO IV.

BORUSSIAE REGE AUGUSTISSIMO, POTENTISSIMO,

PRIDIE KALENDAS OCTOBRES A. MDCCCXL CLEMENTISSIME RECEPTI,

PROSPERA AUSPICIA INDICANTUR.

ADIECTA EST LEPIDAGATHIDIS, GENERIS EX ACANTHACEARUM ORDINE. ILLUSTRATIO MONOGRAPHICA.

VRATISLAVIAE AD VIADRUM

EX OFFICINA GRASSII, BARTHII ET SOCIORUM.

MDCCCXLI.

FRIDERICUS GUILELMUS IV, Borussiae Rex Augustissimus, Potentissimus, decreto **SUO**, pridie Kalendas Octobres anni praeteriti emisso, **PROTECTOREM SE** Academiae Leopoldino-Carolinae Caesareae Naturae Curiosorum **SUPREMUM** declaravit.

Quo felicissimo eventu precibus nostris et inprimis suadente Regis in rebus ad litteras spectantibus summo Ministro a Clementissimo Principe impetrato et Academia nostra veluti e tumulo Protectoris, coelo fruentis, in vitam revocata, quum evenisse, quod fuerat in votis, hodie nunciandum sit, talem me adferre nuncium scio, qui non solis collegis faustissimus videatur atque exoptatissimus illis perveniat, sed cuius fama etiam toti erudito orbi pergrata, multorum animos debitae gratitudinis et amoris erga Regem ac benefactorem sensu commoveat.

Nunc autem, iis, quae mei officii erant, perfunctus, memorem me esse decet regulae, qua admonemur, inter graviora negotia esse silendum, ne rebus excelsis, addita priva nostra exilitate, aliquid

detraxisse videamur; neque habeo sane, quod possim ultra adferre. Enim vero audivistis, Collegae dilectissimi, summam rerum, a REGE et PROTECTORE Amplissimo, humanissimo, Academiae restitutarum, nec deerit pietas animis, tanto Eius beneficio devinctis.

Scribebam Kalendis Ianuarii a. MDCCCXLI.

Mos est praeclarus, ut scripta, quibus graviora aliqua et ad generis humani commoda spectantia traduntur, maiori et litterarum et chartae volumine exornata in publicum emittantur; scilicet materiae, cui litterae inscribuntur, aeque ac litterarum mole gravitas rerum, per se quidem paucissimis saepe verbis enuntiandarum, significari videtur et ponderari.

Exemplo erant veterum illae inscriptiones, quibus rerum hominumque memoria montium lateribus petrosis, tabulisve saltem lapideis aeneisve inscripta servabatur, neque opus esse videbatur verborum ambagibus et ornatu, dum firmae starent montium radices, dum templorum columnae in pulverem ne conterantur, quae immortali fere mole ac dignitate signa, iis tradita, posteris sancta religione commendarent.

Nostris autem temporibus, quorum praeclare facta laevissima charta excipi solent facilique motu per omnem orbem terrarum quam citissime dispergi, alia via inquirenda erat, si quando scriptum aliquod, per se quidem paucorum verborum, graviori tabula dignum atque aes aut marmor sibi poscere videretur. Augetur paginarum tenuium numerus, donec, in volumen congestae, veluti integrum solidumque inscriptionis, non verbis sed cultu extollendae, praebeant fundamentum. Verum ne rudis et inanimis illa augeatur moles, quae sicut arte est facta, ita et arti pervia esse debet singulis suis partibus

et ingenii vestigiis recipiendis idonea, animus quasi penetrat voluminis compagem, et ex tabula inscripta, quae muta res erat veteribus, resonat.

Hunc equidem Programmatis, quod dicunt, originem et finem reverens legeque a patribus tradita obstrictus, addo animadversiones meas botanicas in ***Lepidagathidem*** genus ex ordine ***Acanthacearum***, quas ex libro inedito „de Acanthaceis“ excerptas lectoribus simul ut specimen Monographiae Acanthacearum, mox edendae, commendo.

Familia: ACANTHACEAE.

Tribus III. AECHMATACANTHI.

Semina retinaculis uncinatis suffulta.

Subtribus III. BARLERIEAE.

Wall. Pl. As. rar. III. p. 75.

Corollae tubus (cum limbi longitudine collatus) brevis; faux inflata; limbus cum fauce infundibuliformis vel bilabiatus. Stamina quatuor, didynama, tubo circa basin inserta, altero pare brevissimo. Antherae bilocellatae. Calyx inaequalis; aliis quadripartitus, lacinia superiori et inferiori maioribus, mediis magisque interioribus minoribus; aliis subbilabiatus, bi- vel quinquepartitus. Capsula omnium iuxta basin tetra-rarius disperma.

LEPIDAGATHIS Willd.

Sp. pl. III. 1. *p.* 400. *n.* 1212. *Blume Bydr. p.* 781 *et* 801. *N. ab E. Acanth. Ind. or. in Wall. Pl. As. rar. III. p.* 76 *et* 95. *n.* 28. *Endlicher Gen. p.* 702. *n.* 4065. Ruelliae spece. *Vahl. Willd.*

Calyx quinquepartitus lacinia superiori maxima bracteiformi.

Corolla bilabiata, labio superiori vel integro, vel bidentato, vel bifido, laciniis labii inferioris conformibus.

Stamina quatuor, didynama, inclusa, per paria consociata; antherae bilocellatae locellis parallelis contiguis, in nonnullis basi divergentibus.

Capsula bilocularis, bivalvis, ad basin tetrasperma, lateribus membranaceis; dissepimento rigidulo persistente. Semina compressa.

Inflorescentia: spica brevis, in ramulo brevi lateralis, simplex vel glomerato-composita, secunda. Bracteae communes in spira simplici dispositae, e binis iugis ad ¼ solutis constante, alternis foliolis inaequalibus, spira autem inversa.

1, 3, 5; 2, 4, 6
folia iugorum minora significant.

1', 3', 5'; 2', 4', 6'
folia iugorum maiora.

Flores sub singula bractea singuli, bibracteati. Calycis lacinia superior, tum duae inferiores, dein duae mediae maiores. Bractea et calycis laciniae maiores nervosae.

Plantae vel annuae, vel perennes et lignescentes, ramosae, parviflorae, foliis saepe repandis aut dentatis, aliae et integerrimis. Omnes Indiam orientalem, tam continentem quam insulas, incolunt.

SYNOPSIS SPECIERUM.

I. *Genuinae.* Antherarum locellis contiguis, foliis integerrimis aut subrepandis.

A. *Bracteae magis minusve scariosae coloratae aristulatae, nec vero nervoso-striatae vel apice spinosae.*

* Spicae terminales, vel axillares terminalesque. Species 1—10.

Lepidagathis fasciculata.
" " *mucronata.*
" " *parviflora.*
" " *Iavanica.*
" " *scariosa.*
" " *hyalina.*
" " *ustulata.*
" " *aristata.*
" " *semiherbacea.*
" " *trinervis.*

** Spicae axillares et subradicales.

Lepidagathis Hamiltoniana. Sp. 11.

B. *Bracteae magis minusve herbaceae, nervoso-striatae, in multis apice spinescentes.*

* Spicae axillares et radicales. Specc. 12, 13.

Lepidagathis rupestris.
" " *cristata.*

** Spicae axillares. Specc. 14—20.

Lepidagathis striata.
" " *purpuricaulis.*
" " *falcata.*
" " *dulcis.*
" " *cuspidata.*
" " *spinosa.*
" " *pungens.*

II. *Alienae.* Antherarum loculis superne adfixis, deorsum divergentibus, foliis dentatis aut profundius repandis. Species Ceylanicae. Specc. 21, 22.

Lepidagathis Ceylanica.
" " *hirta.*

Species dubia.

Lepidagathis setigera.

I. *Genuinae.* Antherarum locellis contiguis, foliis integerrimis aut subrepandis.

A. *Bracteae magis minusve scariosae coloratae aristulatae, nec vero nervoso-striatae vel apice spinosae.*

* Spicae terminales, vel axillares terminalesque. Species 1—10.

1. *Lepidagathis fasciculata*, N. ab E.

L. caule procumbente villoso glandulosoque, foliis oblongo-ovalibus utrinque acuminatis in medio dentatis hirsutulis, spicis capituliformibus racemosis axillaribus, bracteis dorsalibus ellipticis acutis trinervibus glanduloso-pubescentibus. *N. ab E. Acanth.**) *p. 75. n. 1.*

α. Foliis grosse dentatis.

Ruellia fasciculata *Vahl. Symb. III. p.* 82. *Willd. Sp. pl. III.* 1. *p.* 369. *n.* 29. *Pers. Syn. II. p.* 177. *n.* 39. *Retz. Obs. IV. p.* 28. *Roxb. Fl. Ind. or. ed.* 2. *III. p.* 48. *n.* 14. *Wall. Cat. n.* 2394 a *et* 2406.

β. Foliorum dentibus minoribus.

Ruellia viscosula *Wall. Cat. Suppl. n.* 197.

Var. α. in nemorosis prope Thermas *Tranquemalenses* Ceylonae (Griffith); Herb. Madras.

Var. β. ad ripas Attran et Saluen fluminum (Guil. Gomez). Vidi etiam exemplum Herb. Roxburgh. ⊙

Caulis herbaceus, tetragonus, diffusus, villis longioribus interjectisque capitatis inspersus, ramosus, ramis oppositis. Folia tenera, 3 pollices longa, ¾ pollicis lata, acuminata, in petiolum longum cuneatim decurrentia, a medio ad apicem sinuatim dentata, dentibus in var. α. grossis obtusis in var. β. parvis, utrinque villoso-pubescentia. Pedunculi axillares, folio plerumque longiores, tetragoni, villoso-

*) Hoc modo dissertationem meam de Acanthaceis Indiae orientalis, in Wallichii plantis Asiaticis rariorib. (Vol. III.) exhibitam, citabo.

visc. di, inferne trifidi. Folia ad divisiones parva, subspathulata. Spicae subglobosae, vel pedunculatae vel sessiles, secundae, plerumque quatuor, scilicet una in ramulo singulo infero oppositoque, una terminali paullo maiori, et una infra hanc laterali sessili. Bracteae dorsales vacuae, alternae, unguiculares, ovales, acutiusculae, trinerves, pubescenti-glandulosae, ciliatae; opposita fertilis, minor, oblongo-lanceolata, longitudine calycis. Flos subsessilis, bibracteolatus. Bracteolae oppositae, lineares, inaequales; altera calycis longitudine; altera brevior, eaeque (uti calycis partes) villosae et glandulosae, texturae tenerae. Calyx quinquepartitus; lacinia supera lanceolata acuminata trinervis, duae inferae lineares, mediae duae subsetaceae, omnes altitudine aequales. Corolla 2½ lineas longa, pubescens, purpureo-reticulata; labium superius ovatum, obsolete bidentatum; inferius trifidum laciniis obtusis. Stamina 4, didynama, inclusa. Antherarum locelli semiovales, basi acuti, nonnihil inaequales, alter scilicet paullo minor alteroque paullo magis superiora versus adscendens. Capsula calycis longitudine, pyramidalis, pallida, glabra, acumine subulato, ad commissuram sulcata, lateribus planis tenuibus; dissepimentum crassum, medio sulco divisum. Semina ad singulum latus dissepimenti cuiusque valvulae duo, altero ad basin altero paullo superius sito, orbiculata, utrinque plana, ad umbilicum nonnihil prominula, laeviuscula, ambitu fimbrillulata, brunnea; retinacula uncinata.

2. *Lepidagathis mucronata* N. ab E.

L. caule herbaceo repente, foliis triangulari-ovatis acutiusculis basi subcuneatis repando-crenulatis glabriusculis, spicis ovatis axillaribus terminalibusque aggregatis, bracteis fertilibus bracteolisque subaequalibus membranaceis mucronatis calycibusque villoso-ciliatis, calycis lacinia inferiori profunde bifida. *N. ab E. Acanth. p. 95. n. 2.*

Ruellia mucronata *Herb. Heyn. Wall. Cat. n.* 2366 a. *Wight Cat. n.* 1968.

In India orientali (Heyne). Inter *Rungiae repentis* specimina attulit cl. Wight. ⊙

Simillima *Lepidagathidi parviflorae* Blume Bydr., a qua praeprimis differt pubescentia glandulosa, bracteas calycesque vestiente, vel deficiente omnino vel rarissima, et forma foliorum.

Caulis procumbens, geniculatus, magis minusve herbaceus et subtomentosus, humilis. Folia parva, cum petiolo sesquipollicaria, pleraque late ovata, acutiuscula, basi deltoideo-producta, glabra vel pubescentia. Spicae dense imbricatae, 3—4 lineas longae, ovatae, circa caulis apicem capitato-confertae, ad alterum latus conversae, et ipsae subsecundae. Bracteae fertiles et bracteolae dense imbricatae, membranaceae, aequales, oblongo-lanceolatae, aristulatae, villosae et ciliatae. Bractea dorsalis sterilisque paullo latior, nec longior, ovato-elliptica, cuspidata. Calyx usque ad basin fere quadripartitus; laciniae ciliatae; inferior maior, lineari-lanceolata, profunde bifida; laterales lineares, minores; suprema lineari-lanceolata, acuminata, longitudine inferioris at paullo latior. Corolla ringens, bilinearis, pallide purpurea; labium superius ovatum, minutim bidentatum; inferius trifidum. Stamina quatuor, didynama; antherarum loculi oblique contigui, subparalleli, semioblongi, compressi, margine ciliati, mutici. Fructus nostris speciminibus deest.

3. *Lepidagathis parviflora* Blume.

L. caule herbaceo basi repente foliisque triangulari-ovatis apiceve productis obtusis basi subtruncatis repandis glabris, spicis (axillaribus et) terminalibus geminis oblongis, bracteis sterilibus bracteolisque subaequalibus calycibusque villoso-ciliatis glandulosisque, calycis lacinia inferiori profunde bifida.

Lepidagathis parviflora *Blume Bydr. p.* 801.

Crescit in calcareis Iavae insulae ad Kuripan, et etiam circa Bataviam et Tjikao (Blume); in Sarzagona, Haenke. Vidi specimina herbb. Haenkeani et Iunghuhniani. ⊙

Est planta tenera, gracilis, similis quidem ***Lepidagathidi mucronatae,*** sed ex alieno habitu, nitore, foliorum figura propria, bractearum ad bracteolas inversa proportione, glandulis spicae rel. facile dignoscitur.

Caulis semipedalis, pedalis, gracilis, basi prostratus et fibris singulis e singulo geniculo nascentibus recta descendentibus validis apice ramosis repens, dein longiori tractu erectus, rectus proiecturis foliorum acutis scabriusculis tetragonus, caeteroquin (praeter genicula parum tumentia scabriuscula) glaber, articulatus, ramosus vel subsimplex. Folia internodiis breviora, nonnihil inaequalia, a basi fere transversali angulis rotundata medioque brevissimo angustissimoque tractu in petiolum brevem contracta apicem versus fere triangulari-angustata ipso apice obtuso, inaequaliter repanda, nervis costalibus 5-senisve undatim coniunctis praedita, utrinque glabra, nitidula et sparsim lineolata, inferiora et superiora angustiora, 1½ pollicem longa, 5—8 lineas ad basin lata, illa petiolo trilineari, haec nullo fere donata, media latiora, 10—11 lineas lata neque longiora atque illa, petiolo bilineari; suprema minora evidentiusque inaequalia. Spicae terminales, in nostris duae, brevissime pedunculatae, altera 4—5-, altera 3 lineas longa, oblongae, obtusae, secundae, omnibus partibus foliaceis villis longis mollibus patentibus, aliis paullo brevioribus glanduloso-capitatis, vestitis ciliatisque. Bracteae et bracteolae longitudine aequales, bilineares, hae et bracteae steriles etiam forma ovali-oblonga, bractea fertilis autem magis lanceolata est; omnes sunt uninerves, membranaceae, pallidae, in cuspidem setaceam rigidulam dimidiae laminae longitudine excurrentes. Calycis profunde quadripartiti lacinia superior bracteolis

simillima; inferior ad ⅔ bifida, binervis, laciniis lanceolatis cuspidatus paullo brevioribus quam superiori; laterales eiusdem fere longitudinis sed angustae, lineari-subulatae; omnes glandulosae et villosulae. Corolla calyce paullo longior, glabra, pallida, venulosa; labium superius ovale, obtuse emarginatum; inferius ovatum, profunde trifidum laciniis oblongo-lanceolatis obtusis apice puberulis. Stamina quatuor, glabra; antherae pallidae. Ovarium pubescens, stylus glaber; stigma capitatum. Capsula bilinearis, pyramidata, depressiuscula, apice barbata, in dorso valvularum (praesertim basin versus) profunde canaliculata, ad basin bilocularis et in inferiori parte tetrasperma; retinacula parva, obtusa.

4. *Lepidagathis Javanica* Blume.

L. caule herbaceo basi repente hinc adscendente, foliis ovatis acutiusculis basi cuneiformibus subrepandis glabris, spicis conicis terminalibus aggregatis, bracteis fertilibus bracteolisque subaequalibus herbaceis mucronatis calycibusque villoso-ciliatis apice glandulosis, calycis lacinia inferiori profunde bifida.

Lepidagathis Iavanica *Bl. Bydr. p.* 801.

In montanis Gedé, Iavae insulae (Blume); in sylvis montis Brambanan Iavae insulae (Iunghuhn). Floret omni anni tempore. ☉

Persimilis est ***Lepidagathidi mucronatae,*** sed differt caule robustiore minus repente glabro vix ad genicula subpuberulo, foliis maioribus (cum petiolo ½—¾ poll. longo tripollicaribus 1 poll. ad 14 lin. latis) basi valde attenuatis obiter subrepandis, spicis paullo longioribus evidentius secundis, bracteis tam fertilibus quam sterilibus oblongo-lanceolatis quidem sed paullo angustioribus herbaceis nec nisi margine membranaceis magis glandulosis, praesertim apicem versus. Reliqua ut in dicta specie. Corollae labium superius planum. Antherae non ciliatae. Capsula calycis longitudine.

A *Lepidagathide parviflora* foliis recedit basi cuneatis, nec subtruncatis aut breviacutatis.

5. *Lepidagathis scariosa* N. ab E.

L. caule fruticoso foliisque ovatis repandis subtus pulverulento-tomentosis, spicis terminalibus capitatis involucratis, bracteis omnibus membranaceis calycisque quadripartiti laciniis breviaristatis villosulis, harum inferiori profunde bifida acuminata. *N. ab E. Acanth. p. 95. n. 5.*

Lepidagathis lanata *Wall. Wight. Cat. n.* 1969.
Ruellia scariosa *Wall. Cat. n.* 2354 a, b.
Ruelliae spec. *Herb. Madr. Wall. l. c. sub n.* 2354 a.

In convallibus nemorosis provinciarum Madurae et Dindygul (Wight); Palamcottah (idem); in Travancore (Herb. Madr.). Vidi exempla Herb. Wight. et Herb. Madr. ♃

Differt a reliquis cognatis tomento e setulis brevibus fasciculatis detersibilibus caulem et foliorum nervos venasque inferius, iuniora folia tota, tegente, primum albicante, in exemplis diutius asservatis ferrugineo.

Rami lignescentes, teretes, graciles, trichotomi, erecti, aetate calvi, fusci, lenticellis ovatis pallidis inspersi. Folia opposita, subaequalia, cum petiolo semipollicari 1—2¼ pollices longa, ½—1 pollicem lata, in petiolum angustum tomentosum acuta basi magis minusve decurrentia, ovata, obtusa, subrepanda, apicem versus subcrenata vel etiam integerrima, supra pubescenti-scabra, subtus magis minusve tomentosa. Spicae 4—5, terminales sessiles, capitulum hemisphaericum magnitudine nucis iuglandis construunt involucratum iugis geminis approximatis foliorum, quorum inferiora caulinis similia subsessilia, superiora et intima minora ovalia penitus sessilia et amplectentia.

Bracteae dorsales steriles; inferiores praesertim rhombeo-ovatae, acutiusculae, cum vel absque mucrone; reliquae angustiores, longius aristulatae; omnes autem cum fertilibus, quae lanceolatae sunt, membranaceae, villosae et villoso-ciliatae, quinquenervi-striatae, 5—6 lineas longae. Bracteolae bracteas calycemque aequantes, lanceolatae, acuminato-aristatae, trinervi-venosae. Calycis lacinia superior figura bracteae dorsalis, rhombeo-ovata, quinquenervi-venosa, ut reliquae ciliata, villosa, aristulata; infera rhombeo-oblonga, paullo brevior, paullo ultra medium bifida, laciniis acuminato-aristatis binervibus; duae mediae plus triplo breviores, lineari-subulatae, carinatae, hirsutae; aristarum omnium apices albae. Corolla semipollicaris, pallida, villosa, ringens; labio superiori ovato emarginato, inferiori latiori trifido laciniis aequalibus obtusis. Stamina longitudine corollae; filamenta glabra; antherae locellis glabris muticis subdivergentibus. Ovarium ovato-conicum, pubescens. Fructus deest.

Adnot. Inter reliquas plurimum accedit ***Lepidagathidi dulci,*** sed differt haec integumento, spicis axillaribus, calycis lacinia infera usque ad basin partita, laciniis dimidiato-ellipticis brevi mucronulo praeditis.

6. *Lepidagathis hyalina* N. ab E.

L. caule suffruticoso, foliis ovato-ellipticis oblongisve utrinque attenuatis repandis ad costas subtus scabris, spicis ovatis axillaribus terminalibusque aggregatis, bracteis ovato-oblongis bracteolisque lanceolatis et calyce aristatis villoso-ciliatis basi hyalinis, calyce 4-partito, lacinia inferiori profunde bifida. *N. ab E. Acanth. p. 93. n. 4.*

α. Caule erecto glabriusculo.

Lepidagathis incurva *Don. Prodr. Fl. Nep. p.* 119.

Ruellia ? distichia *α et β Herb. Hamilt. Wall. Cat. n.* 3565 c. (*sub* Ruellia dependente) *et* 3565 H.

3. Dependens, caule prostrato, ad genicula seriatim radiculoso-pubescente, foliis supra magis minusve hirsutis.

Ruellia dependens *Wall. Cat. n.* 2365 b, d, e, f.

Var. *α*. in Promae montibus (Guil. Gomez); inter Chappedong et Amherst urbem (idem); ad Goalpara et Dimla (Hamilton).

Var. *β*. prope Sivapura (Hamilton); in Silhet (F. de S.); in Nepalia (Wall.); in Penang a. 1822 (Wallich).

Planta amoena, ***Lepidagathidis mucronatae*** similitudine sed maior. Caulis in var. *α* erectus, proiecturis acutis quadrangulus, ad genicula hirtulus vel totus scaber. Folia caulina 6—7 pollices longa, 3 pollices lata, acuta, basi cuspidato-acuta in petiolum longiorem vel breviorem decurrentia, quandoque fere deltoidea, penninervia, ad venas et costam (subtus praesertim) scabra, obiter repando-subcrenata; ramea oblonga, 3½—4 pollices longa ¾—1 pollicem lata. Spicae fere ut in ***Lepidagathide mucronata,*** sed maiores. Bracteae inferiores ovatae, superiores oblongae, omnes (exceptis infimis) basi maximam partem membranaceo-hyalinae, nitentes, apice reticulatae, virentes (adultiores rufae), aristato-cuspidatae apicibus aristarum albis, apicem versus longissime villoso-ciliatae ciliis confertim articulatis. Bracteolae lanceolatae, calycem aequantes, acuminato-aristatae, simili modo basi hyalinae, apicem versus ciliatae ibidemque nervulo marginatae. Calyx basi hyalinus, 3 lineas longus, quadripartitus; laciniae ciliatae, aristulatae; superior bracteolis similis; inferior usque ad basin fere in lacinias duas lineari-lanceolatas superiori conformes fissa; mediae lineari-setaceae. Corolla vix tres lineas longa, glabra, inferne tubulosa, pallida; labium superius ovatum, concavum, bidentatum, purpureo-punctatum, inferius ad fauces purpureo-punctatum, trifidum, laciniis obtusis, lateralibus oblongis, media paullo latiori. Stamina labio superiori paullo breviora, alba; antherae ovatae, locellis subaequalibus. Capsula duas lineas longa, compresso-tetragona, acu-

minata, laevis, pallida, tetrasperma, altero semine iuxta basin, altero utriusque valvulae in medio sito. Semina orbiculata, lutea, in disco laevia, in ambitu scrobiculato-rugulosa.

Var. β. differt caule (casu fortassis) ad terram deiecto radicante geniculato radiculoso pubescente, foliis subtus (saepe etiam supra) magis hispidis, spicis in glomere pluribus paullo magis villosis longius aristulatis, calyce paullo longiore, in quibusdam apice magis subulato.

7. *Lepidagathis ustulata* N. ab E.

L. caule suffruticoso (humili) basi repente, foliis ovalibus oblongisve scabris infimis minoribus spathulatis, spicis ovatis terminalibus subagglomeratis, bracteis bracteolisque et calycis subquinquepartiti laciniis maioribus lanceolatis acuminato-aristatis subaequalibus, alternis hyalinis coloratisque. *N. ab E. Acanth. p. 95. n. 5.*

Ruellia ? ustulata *Herb. Hamilt. Wall. Cat. n.* 2366 b. (*sub* Ruellia mucronata).

Ruellia mucronata *Wall. Cat. n.* 2366 b, c.

Circa Gurrukpur et Sukanaghur (Hamilton); in Hindustania (Wallich). Floret Aprili. ♃

Forma minor *Lepidagathidis hyalinae* videri posset, sed differt constanter caule humili (digitali vel spithamaeo) basi repente, ramis multis confertis erectis pubescenti-scabris, foliis ramorum trium vel quatuor parium (quorum infima minima 2—3 lineas longa spathulata, tum alterum maiorum par spathulatorum vel ellipticorum; tertii paris elliptica vel oblonga basi apiceque magis vel minus attenuata, obtusa, in brevem petiolum continuata, supra subtusque magis vel minus pubescenti-hirtula, vel etiam glabriuscula; summi paris folia denique consimilia, sub capitulo sessilia, praecedentibus paullo minora, vel etiam maiora), spicis terminalibus et in plantis humilioribus, quarum rami brevissimi, fere agglomeratis, bracteis bracteolisque lanceolatis

longiori acumine in aristulam transeuntibus (simili autem ratione his atque illis alternatim membranaceis et herbaceis viridibus purpureisve ciliatis e. s. p.), calycis laciniis latioribus simili ratione longius acuminatis et propter infimam usque ad basin fere partitam ad speciem ternis. Reliqua congruunt.

Variat spicis viridi-pallidoque et purpureo-pallidoque variis, tum caulis ramis humilioribus confertis magisve elongatis.

8. *Lepidagathis aristata* N. ab E.

L. caule suffruticoso (?) erecto, foliis ovali-oblongis utrinque attenuatis repandis subtus pubescenti-scabris, spicis conicis, axillaribus oppositis terminalibus capitatis, bracteis ciliatis, dorsalibus lanceolatis bracteolisque ellipticis hyalinis longe aristatis, calycis ciliati lacinia infima profunde bipartita. *N. ab E. Acanth. p. 95. n. 6.*

Wall. Cat. n. 7163.

Ad Moalmyne et in ripa Attron fluminis (Guil. Gomez). 4

Quod ad caulem et folia *Lepidagathidi hyalinae* accedit, sed foliis differt subtus tota pagina pubescenti-scabris et inflorescentia diversa.

Spicae axillares, oppositae, solitariae vel altera minore ad basin auctae, terminales 8—10 in capitulum grande congestae; maiores pollicares-sesquipollicares, conicae, secundae, aliae dimidio minores, purpureae. Bracteae uninerves; dorsales sterilesque 5 lineas longae, lanceolatae, in acumen aristiforme attenuatae, ciliatae, in latere exteriori angustiorique purpuraccentes, in latere interiori albo-hyalinae; inferior et fertilis lanceolata, aequilatera, brevius acuminata, tota membranacea, apice purpurea. Bracteolae 4½—5 lineas longae, oblongae, aristato-cuspidatae, ciliatae, albo-hyalinae, uninerves, apice nonnihil reticulatae et cum arista ciliata purpureae. Calyx quatuor lineas longus, membranaceus, ciliatus, apice purpureus; laciniae eius purpureo-

aristatae; supera lanceolata; inferior usque ad basin fere bipartita laciniis lineari-lanceolatis; mediae paullo breviores, lineari-subulatae. Corolla duas lineas longa, extus puberula, pallida, fusco-purpu[illegible] maculata; labio superiori breviori ovato bidentato, inferior[illegible] Stamina alba. Capsula duas lineas longa, compresso-tetragona, acuminata, pallida, glabra, apice pubescens, a basi ad medium tetrasperma; dissepimentum adnatum, indissolubile. Semina rufa, laeviuscula, orbiculata, basi truncata.

9. *Lepidagathis semiherbacea* N. ab E.

L. caule suffruticoso foliisque lanceolatis repandis basi longe attenuatis glabris, spicis axillaribus oppositis, terminalibus ternis ovatis, bracteis bracteolisque subaequalibus oblongo-lanceolatis ciliatis membranaceis, bracteolarum exteriori herbacea, calycis ciliati lacinia inferiori late lineari bifida. *N. ab E. Acanth. p. 96. n. 7.*

α. Caule erecto, calycis lacinia inferiori apice bifida.
Wall. Cat. n. 7164 A, B.

β. Caule prostrato radicante, foliis longioribus lanceolato-linearibus, calycis lacinia inferiori bipartita.
Ruellia dependens var. angustifolia, an distincta species ? *Wall. Cat. n.* 2365 g.

Var. α. Ad Chappedong et in ripa Attron fluminis (Guil. Gomez.)
Var. β. in Nepalia inferiori ad Helaundal (Wallich). Decembri.

Caulis procumbens, adscendens, herbaceus, gracilis, ramosus, glaber nec lineolatus, per proiecturas subquadrangulus. Folia opposita, 5—6 pollices longa, ¾—1 poll. lata, lanceolata, acuminata cum acumine plerumque obtusiusculo, margine repanda, basi repanda in petiolum longum ad dimidium decurrentia, ala fere lineam lata; superiora brevius petiolata; omnia glabra, supra lineolata, oppositum duplo minus. Spicae pleraeque in ramulo axillari variae longitudinis

(2 lin. — 1½ pollicum) apice diphyllo, vel in apicibus caulium ramorumque terminales ternae sessiles; deficiente ramulo laterali subinde axillari-sessiles, ½—¾ pollicis longae, ovatae, obtusae, rufo- pallido-viridique-vittatae. Bracteae communes 4 lineas longae, aequales, oblongae, acutae cum mucronulo, ciliatae, uninerves, apice reticulatae; dorsalis sterilisque dimidio exteriori viridi vel rufescente, interiori membranaceo; ventralis fertilisque tota membranacea. Bracteolae propriae longitudine communium; exterior plana, herbacea, viridis, dimidiato-oblonga, uninervis, acuta; interior oblongo-lanceolata, subulato-acuminata, carinata, membranacea, ciliata. Calyx quatuor lineas longus, quadripartitus; laciniae longitudine aequales, membranaceae, parce reticulatae, ciliatae; superior lineari-lanceolata, acuta, trinervis; inferior paullo latior, fere aeque lata, quadrinervis, ad ⅙ bifida lacinulis contiguis acutis; mediae duae lineari-acuminatae, uninerves. Corolla 3½ lineas longa, pallida; tubus cylindricus, apicem versus paullo angustior, glaber; limbus extus pubescens; labium superius inferiori brevius, obtuse bilobum; inferius latius, trifidum, laciniis rotundatis. Stamina longitudine faucis, glabra, alba; locelli antherarum contigui quidem at subobliqui, altero paullo altius posito. Stylus hirsutus. Capsula ovata, valde compressa, acuta, laevis, pallida, calyce brevior, ad basin tetrasperma; dissepimento completo.

Var. β. plurimis quidem convenit formae α, sed differt calycis lacinia inferiori profunde bipartita, foliis praelongis (5—7 pollicum longitudine), ½ pollicem latis vel angustioribus, cauleque radicante. Accedit his notis ad *Lepidagathidem Hamiltonianam*, sed specimen nobis est incompletum, floribus nondum evolutis.

10. *Lepidagathis trinervis* N. ab E.

L. caule suffruticoso diffuso foliisque lanceolato-linearibus trinervibus glabris, spicis capitato-congestis axillaribus ciliatis, bracteis

conformibus ovatis bracteolisque interioribus lanceolato-cuneiformibus membranaceis calycisque quinquepartiti laciniis aristatis. *N. ab E. Acanth. p. 96. n. 8.*

Barleria ? trinervis *n.* 2500 a. b.

Ruellia ? trinervis *Herb. Hamilt. Wall.* (*l. c.* a.)

Ad Sasera (Hamilton); prope Lohargaon (Royle).

Floret Ianuario. ♃

Planta parva, diffusa, ramis gracilibus ramosis multinodibus glabris acute quadrangulis, lateribus oppositis alterna vice magis excavatis. Folia 1—1½ pollices longa, 1½ lineas lata, acuta vel obtusa cum mucronulo, integerrima, sessilia, patenti-recurva, glabra, subtus et circa margines scabra, trinervia nervo medio crasso depresso-plano lateralibus tenuioribus marginibus approximatis subrepandis. Spicae axillares, sessiles, raro simplices, plerumque e binis ternisve tam arcte compositae, ut simplices ubique videantur, ½—¾ pollicis longae, ovato-conicae, sursum secundae, densissime imbricatae, recurvo-patentes. Bracteae, bracteolae et calyces longitudine aequales, fere quatuor lineas longae, dorso medio et margine molliter ciliatae. Bracteae membranaceae, ovatae vel ovato-ellipticae, uninerves, cuspide subulata recurva longitudine fere bracteae terminatae. Bracteola exterior oblongo-lanceolata, oblique acuminato-aristata, plana, herbacea, dorso glabra, subtiliter nervoso-striata, acumine bracteola duplo breviori; interior bracteola membranacea, cuneiformi-attenuata, acumine aristiformi duplo longior, uninervis. Calyx quinquepartitus; laciniae longitudine aequales; superior et duae inferiores figura et magnitudine bracteolae interioris, apice paullo magis herbaceae et villosiores; harum duae inferiores basi paullo altius coniunctae; duae interiores lanceolato-lineares. Corolla 3 lineas longa, alba, pubescens; tubus brevis; faux inflata; labium superius subovatum, obtusum, integrum; inferius latum, trifidum, lacinis obtusis, lateralibus

angustioribus. Stamina quatuor, didynama, alba, longiora exserta et ad latera recurva; antherarum loculi basi nonnihil inaequales et subobliqui. Capsula bilinearis, ovato-pyramidalis, compressa, ad dissepimenti latus canaliculata, laevis, pallida, disperma; parietes chartacei; dissepimentum validum, durum. Semen in loculo quoque unum, alterum ad basin, alterum in medio positum, loculum replens, ovatum, acutum, hinc convexum, inde planum, subtilissime rugulosostriatum, lutescens, ad acumen residuis albicantibus pelliculae membranaceae apiculatum.

** Spicae axillares et subradicales. Spec. 11.

11. Lepidagathis Hamiltoniana N. ab E.

L. caule suffruticoso diffuso, foliis linearibus elongatis glabris margine scabris, spicis circa radicem conglomeratis, bracteis ex ovato-oblongis bracteolisque lanceolatis subulato-acuminatis longe ciliatis, calycis quadripartiti ciliati laciniis acuminatis, inferiori latiori bifida. *N. ab E. Acanth. p. 96. n. 9.*

Lepidagathis Hamiltoniana *Wall. Cat. n.* 2422.

Ruellia ? radicalis *Herb. Hamilt.*

Ad Nuni (Hamilton), Novembri. 4

Proxime affinis *Lepidagathidi cristatae,* sed sane distincta est species, differt caule elongato flagellari, inferne aphyllo, superne folioso, foliis 5—6 pollices longis, 2 lineas latis subfalcatis (acutis margine scaberrimis supra transversim lineolatis), spicis iuxta basin pluribus in spicam ovatam ovi magnitudine compactis, caulinis nullis, maximeque bractearum florumque magnitudine fere dupla diversaque structura.

Bracteae et calyces non villosa, sed apicem versus pilis sparsis, glandulis impositis, hirsuta et simili ratione longe ciliata, apice purpurascentia. Bracteae 5—6 lineas longae; steriles ovatae vel ovato-

oblongae, aristato-acuminatae acumine setuliformi, mimus hirsutae, plurinerves; fertiles lanceolatae, apice hirsutae et valde ciliatae, uninerves. Bracteolae his similes, paullo angustiores. Calyx apicem versus e glandulis hirsutus ciliatusque; lacinia superior 5 lineas longa, oblongo-lanceolata; mediae lanceolatae, trilineares; inferior 4 lineas longa, ovalis, usque ad medium bifida, laciniis omnibus lacinulisque aristulato-acuminatis. Corolla 3 lineas longa, pubescens, pallida, intus fulvo-maculata, tubus brevis; labium superius inferiori brevius concavum, minute bidentatum; inferius latum, in medio biplicatum, trifidum, laciniis obtusis, lateralibus angustioribus. Stamina quatuor, inclusa; antherarum locelli basi apiceque divergentes, margine rigide fimbrillulati; unus paullo altius positus. Fructus deest.

Adnot. Comparanda cum ***Lepidagathide semiherbacea*** β, quae quidem spicis in summitate ramorum oppositis terminalibusque, nullis autem radicalibus, differt.

B. *Bracteae magis minusve herbaceae, nervoso-striatae, in multis apice spinescentes.*

* Spicae axillares et radicales. Specc. 12, 13.

12. *Lepidagathis rupestris* Wight.

L. caule suffruticoso diffuso foliisque oblongis pubescenti-scabris, spicis capitato-congestis circa radicem conglomeratis lanatis, bracteis bracteolisque subconformibus ovato-orbiculatis ellipticisque submucronatis, calycis quadripartiti laciniis submucronatis, inferioti ad medium usque bifida. *N. ab E. Acanth. p. 96. n. 10.*

Lepidagathis rupestris *Wight. Cat. n.* 1979.

Inter rupes in collibus apud Ongole rarius (Wight). ♃. ♄.

Species pulchra, *Lepidagathidis cristatae* simulitudine. Differt caule foliisque pubescentia rigidula adspersis, foliis oblongis ¾ pollicis longis 3 lineas latis acutiusculis late sessilibus coriaceoribus pubescen-

tibus cum aliqua viscositate, spicis minoribus circa radices etiam densius congestis lana densa, nec adeo longa, viscidula candidis, bracteis latioribus rigidioribus mucronulis brevioribus praeditis, ob lanam saepe ad speciem submuticis.

Bracteae et bracteolae circiter 2½, vix 3 lineas longae, concavae, membranaceo-chartaceae, apice viridulae, lanatae, obsolete nervosae; dorsales steriles, suborbiculatae, cuspidato-mucronatae, ventricosae, magis herbaceae; fertiles ellipticae, tenuiores, mucronulatae, ventricosulae. Bracteolae ellipticae, fertilium latitudine, mucrone breviori herbaceo. Calyx bracteolarum longitudine, dense lanatus, rigidulus, quadripartitus; lacinia superior obovato-elliptica, obtusa, submutica; inferior eiusdem latitudinis et longitudinis, ad medium usque bifida, laciniis oblongis acute mucronatis; laterales lanceolatae, mucronatae, aeque longae. Corolla omnino *Lepidagathidis cristatae*, albida, extus densius pubescens, labio inferiori extus barbato; lacinia media labii inferioris ad fauces fulvo maculata, lacinulis lateralibus rotundatis; labium superius ovato-concavum, emarginatum, paullo brevius. Stamina fauces aequantia; antherae oblongae, albae, locellis, parallelis.

13. *Lepidagathis cristata* Willd.

L. caule suffruticoso diffuso foliisque lineari-lanceolatis glabris, spicis capitato-congestis circa radicem conglomeratis in ramis axillaribus lanuginosis, bracteis bracteolisque conformibus oblongis mucronatis, calycis quadripartiti laciniis mucronato-aristulatis inferiori bifida. *N. ab E. Acanth. p. 96. n. 11.* ♄

Lepidagathis cristata *Willd. Sp. pl. III.* 1. *p.* 400. *Poir. Enc. méth. Suppl. III. p.* 333. *Spr. S. V. II. p.* 827. *n.* 1. *Wall. Cat. n.* 2421 a. (ex parte.)

β. Spicis omnibus circa radices congestis.

Wight. Cat. n. 1971. *Wall. Cat. n.* 2421 b.

Selago acaulis *Herb. Russell. Wall. Cat. n.* 2421 c.

In apricis glareosis prope Madras etc. frequens (Wight). Vidi exempl. herb. Madr. cum ***Dicliptera bupleuroide*** mixtum.

Fruticulus parvus, Helianthemi vulgaris facie. Rami proiecturis angulati, articulati, diffusi, glabri, ad angulos saepe scabri. Folia lineari-lanceolata, sessilia, acuta, glabra, margine scabra, ¾—1 pollicem longa, 2 lineas lata. Spicae 2—3 in capitulum magnitudine nucis avellanae subglobosum compactae, revera axillares, sed pleraeque circa basin ramorum radicalium in globum ovi gallinacei, immo pugni magnitudine coacervatae. Bracteae dense imbricatae, una cum calycibus chartaceo-membranaceae, apice magis herbaceae, in mucronem aristuliformem acutissimum desinentes, obsolete nervosae, lanuginosae et molliter ciliolatae; tam bracteae quam bracteolae oblongae sunt, 4 lineas longae, hae paullo angustiores tenerioresque. Calyx 3½ lineas longus, profunde quadripartitus; lacinia superior obovato-oblonga; inferior elliptica, binervis, ad ¼ bifida, laciniis ovatis rectis; laterales lineares, angustae, longitudine reliquarum. Corolla 4 lineas longa, pubescens, alba; tubus cylindricus, longitudine ⅓ corollae; faux truncato-discreta; labium superius inferiori paullo brevius, oblongum, fornicatum, bidentatum; inferius trifidum, laciniis rotundatis, media concava adscendente plica duplici purpureo-punctata in fauces descendente. Reliqua generis.

Spicae axillares. Specc. 14—20.

14. Lepidagathis striata **N. ab E.**

L. caule herbaceo foliisque oblongis utrinque acuminatis subrepandis glabris, spicis in ramulo axillari brevi aggregatis capituliformibus, bracteis dorsalibus ellipticis quinque-septemnervibus bracteolisque cum calycibus quinquepartitis nervosis glanduloso-hirtis. *N. ab E. Acanth. p. 96. n. 12.*

Wall. Cat. n. 7405.

In montibus Promae (Guil. Gomez). ♃

Caulis herbaceus, procumbens, adscendens, proiecturis acutis quadrangulus, flexuosus, glaber. Folia 5—6 pollices longa, 1¼ pollices lata, oblonga, longe acuminata, in petiolum brevem longe decurrentia, vix conspicue repanda, glabra nec lineolata, in pare aequalia. Spicae in ramulis axillaribus solitariis 2—3 lineas longis duae vel tres, semipollicares, aggregatae in capitulum tot paribus foliorum, quot sunt spicae, lanceolatis decrescentibus obvallatum. Omnes spicae partes cum calyce rigidulae sunt, herbaceae, mucroniformi-acuminatae, nervis rigidis crassis striatae et pilis glanduliferis glutinosae villisque longioribus crispescentibus vestitae. Bracteae superiores 3 lineas longae, ellipticae, quinque-septemnerves; inferiores fertilesque lanceolatae, trinerves, ubi dorsales septemnerves non raro 5- vel 7-nerves. Bracteolae angustae, lineares, acuminatae, trinerves. Calyx inaequalis, quinquepartitus; lacinia superior 5 lineas longa, oblonga, quinquenervis; duae inferiores 4 lineas longae, lineari-lanceolatae, trinerves; mediae his paullo minores, lineari-subulatae, uninerves. Corolla 4 lineas longa, pubescens, pallida, immaculata; labium superius bifidum laciniis obtusis; inferius trifidum laciniis rotundatis subtus hirtis. Stamina longitudine corollae, glabrae; antherae lineares, pallide violaceae. Stylus filiformis, hirtus. Fructus ignotus.

15. Lepidagathis purpuricaulis N. ab E.

L. caule herbaceo, foliis lanceolatis longissime acuminatis remote crenatis glabris, spicis conicis simplicibus vel subcompositis axillaribus, bracteis nervosis calycibusque hirsutissimis, calycis quinquepartiti laciniis inferis trinervibus. *N. ab E. Acanth. p. 96. n. 15.*

Ruellia purpuricaulis *Wall. Cat. Suppl.*

Ruellia ? Nilbutia *Herb. Hamilt. Wall. Cat. n.* 2366 d. (*sub* Ruellia mucronata).

Ruellia tenuis *Herb. Hamilt.* *Wall. Cat. n.* 2366 c. (*sub* Ruellia mucronata).

Ruellia mucronata *Wall. Cat. n.* 2366 c, d, f.

In montium iugo Toang dong dicto (Guil. Gomez); prope Burhi Simar et Sivapura (Hamilton); circa Hurdwar (Wallich). Floret a Novembri in Martium. ♃

Ramus virgatus, gracilis, flexuosus, purpureus, glaber, teres, proiecturis foliorum alternatim notatus ideoque subquadrangulus. Folia 4 poll. longa, 8—10 lineas lata, longissime acuminata, in petiolum brevem acute desinentia, remote crenata seu potius sinulis exiguis acutis dissitis incisa, quorum intervalla crenulas latas parum conspicuas exhibent, glabra, nec lineolata, penninervia. Spicae in ramulo, petiolo modo longiori modo breviori, bifolio, ½—¾ pollices longae, basi plerumque spica una vel altera accedente sublobatae, saepe etiam simplices, hirsutie incanae, conicae. Rhachis saturate purpurea. Bracteae circiter tres lineas longae, oblongae, aristato-acuminatae, rigidulae, hirsutissimae, quinquenerves, nervis basi purpureis. Bracteolae propriae lineari-subulatae, trinerves, hirsutae et ciliatae. Flores singuli. Calycis lacinia superior figura et magnitudine bracteae communis; duae inferiores bracteolarum similitudine; mediae breviores, lineari-setaceae. Corolla 5 lineas longa, glabra, tubo subcylindrico, fauce vix inflata, labio superiori breviori recte bilobo, inferiori trifido laciniis aequalibus oblongis obtusis, lateralibus subtus barbatis, media glabra. Stamina violacea, glabra. Fructus deest.

16. *Lepidagathis falcata* N. ab E.

L. caule fruticoso foliisque ovatis obtusis glabris, spicis axillaribus falcato-recurvatis, bracteis sterilibus fertilibusque secundis scariosis nervosis oblongo-acuminatis subaequalibus, calyce quadrifido, lacinia

supera et infera oblongis aequalibus, infera apice bifida. *N. ab E. Acanth. p. 96. n. 14.*

Ruellia scariosa *Wall. Cat. n.* 7166.

In Toang dong montibus (Guil. Gomez). ♄

Planta memorabilis propter calycem Barleriae inflorescentiae Lepidagathidis coniunctum. Corolla deest. Propter habitum igitur generi Lepidagathidis adscripsi, neque in hoc me erravisse puto.

Caulis fruticosus. Rami teretes, glabri, dense pallide lineolati proiecturisque geminatis oppositis instructi. Lignum album. Folia 2½ pollices longa, 1¼—1½ pollices lata, apice modice attenuato obtuso, in petiolum alatum decurrentia, obiter repanda, glabra, supra lineolata, subtus pallidiora. Spicae axillares, solitariae, circiter bipollicares, sessiles, a basi laxatim reflexae, sursum secundae. Bracteae semipollicares, spiratim positae, steriles fertilesque conformes, secundae, oblongo-lanceolatae, subulato-acuminatae, quinquenerves, glabrae; dorsales paullo longiores. Bracteolae lineari-lanceolatae, trinerves, 4 lineas longae. Calyx semipollicaris; lacinia inferior oblonga, apice ad ⅙ longitudinis bifida, lacinulis acutissimis apice forcipatim sibi incumbentibus trinervibus, nervo medio tenuiori simplici, lateralibus fortioribus extrorsum venoso-ramificatis; superior lacinia oblongo-lanceolata, acuminata, trinervato-venosa, nervo medio fortiori; laciniae duae mediae lineari-acuminatae, uninerves, superiore et inferiore ¼ breviores. Corolla deest. Capsula tres lineas longa, lanceolata, compressa, acuminata, laevis, straminea, basi brevissimo spatio clausa, hinc bilocularis, dissepimento adnato persistente in laminas non secedente. Semina iuxta basin quatuor, orbiculata, compressa, minutim tuberculata, margine cristellata, pallide brunnea. Retinacula compresso-carinata, subulata.

Adnot. Evidentissimus est transitus huius speciei ad ***Lepidagathidem dulcem;*** scil. calycis lacinia inferior, nervo medio debili coniuncta, apice discinditur, omnisque iam ramificatio nervorum lateralium in hac eadem est, qualis in utraque lacinia ***Lepidagathidis dulcis*** observatur.

17. *Lepidagathis dulcis* N. ab E.

L. caule herbaceo adscendente, foliis ovato-ellipticis in petiolum cuneiformem attenuatis supra hirtulis subtus ad costas scabris, spicis axillaribus oppositis sessilibus, bracteis dorsalibus herbaceis falcatis, fertilibus propriisque membranaceis, calycis quinquepartiti laciniis duabus inferis dimidiato-ellipticis. *N. ab E. Acanth. p. 96. n. 15.*

Ruellia dulcis *Wall. Cat. n.* 7167.

In montibus Promae (Guil. Gomez). ♃

Caulis basi repens, dein adscendens, pedalis, teres, pubescenti-scaber. Folia cum petiolo pollicari 5—6 pollices longa, 1¾—2 pollices lata, ovato-elliptica, acuta vel obtusa, cuneatim in petiolum decurrentia, subintegerrima vel obsolete repando-crenata, supra setulis sparsis hirta et minutim lineolata, subtus ad costas scabra. Spicae axillares, sessiles, oppositae, inaequales, altera 1½— altera vix ¾—½ pollicem longae; superiores subglobosae, crassae, speciosae, conicae, a dorso visae pectinatae. Bracteae dorsales steriles, incumbentes, distiche patentes, semipollicares, oblongo-lanceolatae, oblique acuminatae, herbaceae, quinquenerves, hirsutae; bracteae ventrales fertilesque ellipticae, acutae, 4 lineas longae, tri-quadrinerves, et uti bracteolae atque calyces membranaceae, albae, reticulatae, scabrae setulisque longis ciliatae. Bracteolae fere collaterales, lanceolato-falcatae, trinerves, 5 lineas longae. Calyx semipollicaris; laciniae duae inferae semiovales, margine interno recto, nervo uno huic margini propinquo extrorsum venoso-ramificato; superior duarum inferiorum simul sum-

ptarum ambitu, ovalis; mediae lin(e)ari-acuminatae, duplo breviores, angustissimae. Corolla semipollicaris, ringens, purpurascens (?); labium superius ovatum, bidentatum; inferius paullo longius, profunde trifidum, laciniis aequalibus oblongis obtusis subtus hirtis. Stamina quatuor, didynama, longitudine fere corollae, filamenta glabra, gracilia; antherae lineares, basi sagittatae, albae. Ovarium ovatum, acutum, glabrum; stylus filiformis, inferne hirtus; stigma nodulo discretum. Fructus deest.

18. Lepidagathis cuspidata N. ab E.

L. caule fruticoso foliisque ovato-ellipticis utrinque attenuatis pubescentibus, spicis terminalibus basi compositis densis glanduloso-pubescentibus, bracteis trinervibus bracteolis calycibusque spinoso-mucronatis, bracteis sterilibus angustioribus, calycis quinquepartiti laciniis dorsali ovata inferioribusque ovalibus trinervibus. *N. ab E. Acanth. p. 97. n. 16.*

Ruellia cuspidata *Herb. Heyn. Wall. Cat. n.* 2405 a, b.

Hurdwar (Wallich). ♄

Ramus epidermide candida pubescentia tenui mollissima vestitus, ligno albo subtili, tubo medullari satis amplo, dichotomo-ramosus, nodosus, teres, superne proiecturis notatus, pennae anserinae crassitie. Folia principalia rami ovato-oblonga, in petiolum semipollicarem decurrentia, apice attenuata acumine obtuso, repanda, utrinque punctato-aspera et ad nervos pubescenti-scabra; gemmarum axillarium et ramulorum folia in spicam intrantia, ½—¾ pollicis longitudine, ovalia, in spinam acuminata, integerrima, sessilia, utrinque molliter pubescentia, quae sensim magis conferta latioraque et ovata spicas distinguunt partiales, in spicam terminalem 2—3 pollices longam oblongo-lanceolatam apice incurvam et simplicem, ramos uti et ramulos terminantem, confluentes. Omnes spicae partes pubescentia

capitato-glandulosa densa tectae. Bracteae herbaceae, imbricatae; dorsales steriles, 4 lineas longae, oblongo-subcuneatae, spinula alba mucronatae, trinerves, nervis lateralibus apice in margines excurrentibus, in disco venulosae; ventrales fertiles, duplo latiores, paullo longiores, ovato-ellipticae, basi longe ciliatae, longius mucronato-spinosae, nervis lateralibus in apicem excurrentibus. Calyx quinquepartitus; lacinia superior 5- (in fructu 6) lineas longa, oblongo-elliptica; duae inferae paullo altius connexae, oblongae, 4 lineas longae; hae atque illa trinerves, spinuloso-mucronatae; duae interiores paullo breviores, lanceolatae, uninerves, acuminatae. Pubescentia calycis eadem ac bractearum. Corolla 4 lineas longa, hirsuto-pubescens, ferrugineo-reticulata; labium superius breve, late ovatum, emarginatum; inferius trifidum, laciniis obtusis subaequalibus; palatum labii biplicatum. Stamina non exserta; antherae pallidae, locellis basi inaequalibus nonnihil divergentibus apicem versus fimbriatis. Capsula compresso-pyramidalis, ad basin quadricarinata, glabra, grisea, prope basin tetrasperma.

19. *Lepidagathis spinosa* Wight.

L. caule fruticoso ramosissimo, foliis (parvis) sessilibus obovato-cuneiformibus integerrimis spinoso-mucronatis glabris, spicis subsolitariis axillaribus, bracteis bracteolis calycisque quinquepartiti laciniis maioribus conformibus subaequalibus acuminato-spinosis rigidulis subciliatis. *N. ab E. Acanth. p. 97. n. 17.*

Lepidagathis spinosa *Wight. Cat. n.* 1972.
Barleria ? spinosa *Wall. Cat. n.* 2497.

Habitatio incerta. ♄

Fruticulus spithamaeus, densissime ramosus, rigidus, ligno duro albido. Truncus teretiusculus, cortice glabro cinereo; rami hornotini

proiecturis acutissimis geminis alternatim oppositis quasi alati. Ramulorum gemmulae plurimae, microphyllae, ob foliorum mucrones prius explicatos quasi spinosi. Folia approximata, patentia, rigida, 3—3½ lineas longa, duas prope ab apice lineas lata, cuneiformia, sessilia, apice rotundata et in mucronem pungentem lineae longitudine plicato-contracta, integerrima, glabra, laevia. Spicae in ramis vetustioribus, iam foliis orbatis, crebrae, revera axillares, ad speciem laterales, sessiles, patentes, semipollicares, ovatae, sursum secundae, plerumque solitariae, vel e binis ternisve conflatae, arcte imbricatae. Bracteae, bracteolae et calycis laciniae maiores plurimis congruae, 5½—6 lineas longae, e basi latiori in acumen eiusdem fere longitudinis recurvo-patulum rigidum aristato-spiniforme attenuatae, ipsae rigidulae, uninerves, setulis (praesertim in calyce obviis) serrato-subciliatae; bracteae et bracteolae oblongae, illae paullo longiores; calycis lacinia supera ovata, nerveso-striolata; laciniae duae inferae bracteolis similes, paullo angustiores, basi altius cohaerentes; laterales lineares, villosae, ciliatae, aristatae, longitudine exteriorum; omnis calyx basi brevi spatio tubulosus, inferiora versus membranaceus. Corolla nostris speciminibus deest. Pistillum glabrum, stylo filiformi. Capsula 2½ lineas longa, pyramidalis, compressa, glabra, lateribus angustioribus basin versus alato-marginatis, pallida, glabra, a basi disperma (?); dissepimentum validum, persistens, sulculo centrali notatum; parietes chartacei, dissolubiles. Semina non vidi.

20. *Lepidagathis pungens* N. ab E.

L. caule fruticoso ramosissimo, foliis (parvis) sessilibus spinoso-dentatis, spicis binis ternisve capitato-congestis axillaribus villosis, bracteis dorsalibus ovatis fertilibusque bracteolisque oblongo-lanceolatis rigidis apice spinosis, calycis quadripartiti laciniis mucronato-spinulosis, inferiori apice bifida. *N. ab E. Acanth. p. 97. n. 18.*

Barleria ? pungens *Wall. Cat. n.* 2498 a, b.
Acanthus pungens *Herb. Madr. Wall. Cat. l. c.* b.

β. Foliis tomentosis aristisque spicarum brevioribus.

Lepidagathis pungens *Wight. Cat. n.* 1973.
Lepidagathis axillaris *Wight. Herb. propr. olim.*

Var. β. in apricis campestribus prope Tinnevelly urbem non longe a promontorio Commorin sitam (Wight). Exempli herb. Madr. (var. α.) locus natalis non adnotatus est.

Frutex spithamaeus-pedalis, a basi fere dichotomo-ramosissimus, rigidus, pubescenti-tomentosus et scaber; in var. β. tomento tenui strigiloso denso canescens, ligno duro albido. Rami proiecturis oppositis approximatis notati, inferius foliis denudati. Folia 4—9 lineas longa, ovata vel ovato-oblonga vel oblongo-cuneata, sessilia et cicatricem annularem cuiusque paris post casum relinquentia, rigida, acuminata, utrinque in medio dentibus tribus ad quatuor spinosis apicisque spinula longiori armata, glabra, subtus punctulato-asperula, ad margines ciliato-scabra (in var. β. utrinque tomentoso-cana), penninervia. Spicae 2—3 in capitulum nucis avellanae minoris ambitu ita compactae, ut unum corpus ovatum constituere videantur, in axillis foliorum sessiles, iisque delapsis nudae laterales. Bracteae arcte imbricatae, obsolete nervosae, chartaceae, griseae, apiceque purpurascentes, lanatae, integerrimae, concavae; communes apice longius propriae cum calycis laciniis brevius spinoso-acuminatae, pungentes; omnes calycesque longitudine aequales, 4—5 lineas longae; dorsales ovatae, et inferiores quidem latiores brevioresque; fertiles oblongo-lanceolatae. Bracteola exterior lanceolata, inaequilatera; interior lineari-lanceolata. Calycis quadripartiti laciniae longitudine aequales; superior et inferior oblongo-ellipticae, haec ad medium fere (in var. β. ad ¼) bifida, binervis; laterales lineari-acuminatae. Corolla 4 lineas

longa; tubus cylindricus, glaber; limbus cum fauce amplior, extus villosus, albus, fusco-punctatus; labium superius ovatum, bidentatum; inferius profunde trifidum, laciniis oblongis obtusis. Stamina quatuor, fauce paullo longiora; filamenta glabra, fusco-annulata et maculata; antherae bilocellatae, locellis basi inaequalibus albis. Ovarium ovatum, glabrum, quadriovulatum. Stylus filiformis, glaber; stigma obtusum. Fructus deest.

Adnot. In forma maiori et magis glabra acumina aristiformia bractearum et bracteolarum laminam fere suam aequant, et calycis lacinia inferior ob eandem causam ad medium usque bifida est. In var. β. acumina haec lamina sua duplo breviora, etiam dentes foliorum breviores sunt.

II. *Alienae.* Antherarum locellis superne adfixis, deorsum divergentibus, foliis dentatis aut profundius repandis. Species Ceylanicae.*) Specc. 21, 22.

21. *Lepidagathis Ceylanica* N. ab E.

L. caule herbaceo trichotomo-ramosissimo subdiffuso foliisque oblongis utrinque attenuatis subrepandis glabris, spicis terminalibus in pedunculis bi-trifidis congestis, bracteis communibus conformibus ovalibus mucronatis trinervibus bracteolisque lineari-lanceolatis calycisque laciniis mucronulato-acutis subtilissime ciliolatis pilisque raris glandulosis inspersis submembranaceis, antherarum locellis deorsum divergentibus.

Lepidagathis Iavanica β. *Blume Bydr. p.* 802.

β. Bracteis minoribus oblongis, spicis minoribus, foliis basi maxime attenuatis.

*) Generis proprii typus potius quam sectionis. Genus *Lepidagathidis* speciebus his intercedentibus cum *Neuracantho* genere connectitur.

Crescit in Ceylano insula. 24 Var. β. ibidem (Bentham in herb. Arnott).

Caulis tetragonus angulis carinatis tuberculato-asperis, glaber, griseo-punctulatus, divergenti-opposite ramosus ramis flexuosis in iugo inaequalibus. Folia opposita, inaequalia, cum petiolo 3—2 poll. longa, ¾—½ poll. lata, oblonga, acutiuscula, subrepanda et minutim denticulata, in petiolum longum anguste cuneiformem attenuata; ramea minora, brevius petiolata, integerrima. Rami florentes apice trifidi, ramulis lateralibus bifidis, medio trifido. Spicae brevipedunculatae, subglobosae, fasciculiformes; terminalis maior. Supra medium pedunculum bracteae duae, parvae, 2 lineas longae, ovales, membranaceae, mucronatae, pilis glandulosis ciliolatae. Fasciculi bi-plurifidi, partialibus trifloris congestis. Bracteae communes 4—6 lineas longae, 2¼—2¾ lineas latae, ovales, praeter magnitudinem praecedentibus conformes. Bracteolae ad basin singuli floris (subsessilis) tres, quarum inferior falcata dimidiata binervis longitudine fere bracteae communis, duae propriae oppositae minimae setaceae. Calyx usque ad basin 5-partitus, laciniis acutis mucronatis et ciliolatis sicut bracteis; lacinia superior 4 lin. longa, lanceolata, 3-nervis; duae inferiores breviores, lanceolato-lineares, binerves; mediae his etiam minores, lineares, uninerves. Corolla circiter 5 lineas longa, purpurascens (?), reticulata, glabra; tubo incurvo subinfundibulifori, limbo bilabiato, labio superiori ovato obtuse bidentato, inferiori paullo longiori aequaliter trilobo lobis obtusis, interstitiis loborum in faucibus tenuissime membranaceis hyalinis transversim undulato-venulosis. Stamina quatuor, inclusa; filamenta glabra; loculi antherarum bini basi subdivergentes et nonnihil inaequales ac mucronulati, dorso subtilissime ciliolati aut strigosi. Capsula vix tres lineas longa, compresso-quadrangularis, oblonga, acuminata, tenuis, glabra, pallida, bilocularis septo integro, iuxta basin tetrasperma.

22. *Lepidagathis hirta* N. ab E.

L. hirto-pubescens, caule herbaceo diffuso repente ramosissimo, foliis oblongo-lanceolatis obtusiusculis obtuse dentatis, spicis circa ramorum apices subcorymbosis capituliformibus parvis, bracteis membranaceis venoso-reticulatis pilosis glandulosisque calycisque laciniis mucronulato-acutis, communibus inferioribus oblongis trinervibus, reliquis partialibusque lineari-lanceolatis uni- (vel subbi-) nervibus, antherarum locellis deorsum divergentibus.

Ceylon insula. (Herb. Arnott.) ⊙ ?

Summa affinitate cum *Lepidagathide Ceylanica* connectitur, differt hirsutie, foliis minoribus dentatis, spicis parvis, floribus bracteisque minoribus.

Caulis acute quadrangulus, diffusus, geniculatus, ad genicula repens, pilis patentibus mollibus pubescens; rami oppositi, geniculato-adscendentes. Folia opposita, cum petiolo 1—1¼ poll. longa, 3—5 lin. lata, utrinque pubescentia, venis costalibus subsenis tenuibus praedita, in petiolum longum attenuata, apice quoque attenuata, at obtusiuscula, margine sinuato-dentata dentibus approximatis obtusis ad basin evanescentibus. Pedunculi in summorum foliorum axillis bitrifidi, foliolorum lanceolatorum minorum pare brevi ad divisionem, di-tristachyi, subfastigiati, quandoque et altero ramulo foliigeno. Spicae pedunculatae, ovatae, obtusae, 3—4 lin. altae, 5—6-florae, imbricatae. Bracteae tenues, albidae, pennatim laxe reticulatae, integerrimae, calloso-mucronatae, pilis longis et (praesertim apicem versus) glandulis stipitatis vestitae; dorsales inferiores latiores, 3—4 lin. longae, trinerves, steriles; reliquae lanceolatae, obliquae, binerves aut uninerves. Bracteolae calycem aequantes, lineari-lanceolatae aut lineares, uninerves; quarum altera saepe multo minor aut omnino deficiens. Calyx brevissime pedicellatus, 3 lin. longus, laciniis omnibus basi tri-

nervibus pilosis et glandulosis, dorsalis lanceolata et latior paulloque longior, reliquae aequales, aeque divisi, e basi latiori trinervi lineari-subulatae. Corolla trilinearis, structurae eiusdem ac praecedentis. Stamina quatuor; antherarum locelli apici filamenti adfixi, deorsum divergentes, obovati. Capsula 2 lineas longa, tetragona, valvulis dorso canaliculatis, tetrasperma, glabra, pallida.

Species dubia.

? 23. *Lepidagathis setigera* Bl.

L. caule herbaceo repente, foliis ovato-oblongis aut elliptico-lanceolatis dentatis hirsutis, capitulis axillaribus terminalibusque secundis, bracteis calycibusque setigeris. ***Blume Bydr. p. 802.***

Prope Tjikao, Iavae insulae. Floret Iunio. 2. ***Blume l. c.***

Quod reliquum est, proclamanda sunt nomina virorum, qui in memoriam festi huius diei vel in altiores apud Academiam gradus promoti sunt vel noviter in societatem recepti. Sunt autem, qui sequuntur:

In Directoris Ephemeridum locum, Loschgei, Viri doctissimi, candidissimi, obitu vacuum, successit Dr. ***Augustus Goldfuss,*** Eques, Regi Borussiae a consiliis regiminis intimis, Professor Bonnensis, rel. rel.

In Kreyssigii, Adiuncti cum inter vivos esset coniunctissimi, locum iam substitutus est Dr. ***Carolus Philippus de Martius,*** Eques, Professor Monacensis, collega per longam annorum seriem de Academia optime meritus.

Inter collegas Academiae recepti sunt:

Dr. ***Amedeo Avogadro,*** Regi Sardiniae a consiliis aerarii publici supremis, Physices in universitate litterarum Taurinensi Professor emeritus, rel.

Dr. ***Ant. Bertoloni,*** Professor Bononiensis.

Iulius de Flotow, in exercitu Borussico praefectus equitum superioris ordinis emeritus, Cervimontanus.

Dr. ***Gauthier,*** Medicus practicus Lugdunensis.

Dr. ***I. E. Herberger,*** Professor Caesareo-Lutrensis.

Dr. ***Ch. F. Hochstetter,*** Professor Esslingensis.

Dr. ***F. W. Hoeninghaus,*** in curia mercatoria Provinciae Rhenanae praeses.

Dr. *H. F. Kilian,* Professor Bonnensis.

Dr. *St. Marianini,* Professor Mutinensis.

Dr. *Cl. Marquart,* Pharmaciam in universitate litterarum Bonnensi privatim docens.

Dr. *Rampold,* Medicus Esslingensis.

Dr. *V. A. Riecke,* Medicus Stuttgartiensis.

Dr. *C. Schauer,* Horto botanico Vratislaviensi adscriptus.

Dr. *C. Th. de Siebold,* Regiae scholae obstetriciae Danticensis Director et Professor primarius.

Dr. *A. Sismonda,* Professor Taurinensis.

III. *Descriptions of some unpublished Species of Plants from North-Western India.* *By* M. Pakenham Edgeworth, *Esq., F.L.S., Bengal Civil Service.*

Read June 3, 1845.

During a residence of several years in the north-west provinces of Bengal, I gradually collected an herbarium amounting to about 2000 species, partly from the plains and partly from Himala; all the specimens, with a very few exceptions, were collected with my own hands. On my return to England, I gave it, with the exception of a few families mentioned below, to Mr. Bentham, who has kindly undertaken to name and include such as may be new of the *Scrophularineæ* and *Labiatæ* in his monographs of those families in the forthcoming volumes of DeCandolle's 'Prodromus,' and likewise the *Leguminosæ* in his examination and revision of that extensive family. The *Acanthaceæ* have been sent to Professor Nees von Esenbeck; and the remainder of the *Corollifloræ*, from *Bignoniaceæ* onwards (according to the arrangement in DeCandolle's 'Prodromus'), were sent to M. DeCandolle himself; the *Gramineæ* to Messrs. Ruprecht and K. von Meyer at St. Petersburgh; and the few *Carices* I had to Dr. Boott. The remainder has been compared by Mr. Bentham with his herbarium, and such species as appeared new have been carefully examined by me again from the dried specimens. Of most I had descriptions, more or less detailed, made from the fresh plant, and they have been since compared, as far as practicable, with Dr. Royle's and Dr. Wallich's herbaria. Some of those now published are remarkable as offering new forms, as for example, a *Clematis* with bearded filaments and introrse anthers; an *Inula* with white flowers and the habit of an *Aster*; and a Commelyneous plant with a twining stem: others, as being Indian species in genera hitherto considered exclusively American, as *Adenocaulon* and *Oxybaphus*.

In a few instances I have described plants previously named, but without

descriptions, by Dr. Wallich in his 'Catalogue,' or by Dr. Royle in his 'Illustrations.'

I have very unwillingly been obliged to add some more genera to the already unwieldy *Umbelliferæ*; but it was impossible to include these species under existing genera, as now defined. It is remarkable that already in this family, out of 65 Indian species described in DeCandolle's 'Prodromus,' and 15 more by Dr. Lindley in Royle's 'Illustrations,' no less than 8 new genera have been formed out of solely Himalayan species; and I have no doubt that very many new species and genera are still to be found in these mountains.

Ord. RANUNCULACEÆ.

1. CLEMATIS (*Flammula*) AMPLEXICAULIS; floribus paniculatis, sepalis obtusis revolutis, foliis ternatisectis, petiolis longis amplexicaulibus, foliolis ovatis acuminatis.

Hab. Himala, in sylvis ad alt. ped. 7000–9000. Dhanaulti. Floret Aug. et Sept.

Scandens, glaberrima. Folia ternatisecta; petiolo longo (4–6 pollicari) basi dilatato amplexicauli; foliolis distantibus longè petiolulatis, glabris, ovatis, obliquè cordatis, acuminatis, integris, vel variè lobatis, crenato-serratis, serraturis mucronatis, 5–6 pollic. longis, $2\frac{1}{2}$–3 latis. Paniculæ foliaceæ dichotomæ, cum pedunculo intra ramos solitario subtrichotomæ. Pedunculi longi; bracteis amplexicaulibus acuminatis gradatim minoribus variè lobatis, supremis sessilibus lanceolatis 3-dentatis. Flores nutantes; sepalis erectis apice revolutis oblongis obtusis subemarginatis, utrinque velutinis, 10–12 lineas longis. Stamina villosa. Achenia hirsuta, caudâ basi longè, suprà gradatim minùs barbato-plumosâ, apice nudo.

Affinis videtur *C. connatæ*, Wall. at satis differt formâ foliorum florumque.

2. CLEMATIS (*Flammula*) GRACILIS; floribus ternis longè pedunculatis, sepalis erectis apice revolutis extùs velutinis intùs glabris, foliis ternatisectis membranaceis.

Hab. Himala, in sylvis. Shioli, alt. ped. 7000–8000.

Scandens, glabriuscula. Folia ternatisecta subglabra membranacea; foliolis petiolulatis subcordato-ovatis acutis, dentatis, serraturis mucronatis, 3–4 poll. long. 2 poll. latis. Pedunculi longi graciles 3-flori; bracteis lineari-lanceolatis acutis. Flores nutantes; sepalis erectis apice revolutis obtusis extùs velutinis. Stamina basi glabra, suprà pilosa. Achenia tomentosa, caudâ basi plumosâ, apice nudo.

A *C. Mauritianâ* differt sepalis erectis nec patentibus, et foliis tenuioribus.

3. Clematis (*Flammula*) velutina; floribus paniculatis nutantibus, sepalis erectis apice revolutis, foliis pinnatisectis nervosis; foliolis glabris cordato-ovatis.

Hab. Himala, in sepibus, alt. ped. 6000–9000. Simla, Nagkunda.

Scandens, glabriuscula. Folia pinnatisecta puberula; foliolis longè petiolulatis, cordato-ovatis acutis, irregulariter lobatis integerrimisve, grossè crenato-serratis, serraturis mucronatis, 3–4 poll. long. $1\frac{1}{2}$–2 lat. Paniculæ multifloræ, pedunculis ternis longiusculis, bracteis lanceolatis plùs minùs lobatis dentatisve. Flores nutantes, sepalis obliquis acutis utrinque velutinis erectis apice revolutis pollicaribus. Stamina villosa. Achenia tomentosa, caudâ plumoso-barbatâ.

4. Clematis (*Flammula*) parvifolia; pedunculis solitariis 1-floris, foliis bipinnatisectis; foliolis integris sublobatis puberulis glaucis, petiolis dilatatis.

Hab. Himala, ad alt. ped. 10,000–11,000.

Subscandens, subglabra. Caulis (junior) minutissimè puberula purpurascens teres nec sulcata. Folia glaucescentia bi-pinnatisecta; pinnis 4–5 jugis brevibus pauci-foliolatis; foliolis subtùs adpressè puberulis suprà glabris, ovatis, integris v. subdentatis, terminali acuminato, 6–8 lineas longis, 2–3 lin. latis; petiolo basi dilatato subamplexicauli. Pedunculus axillaris solitarius 1-florus 2-bracteolatus, bracteis 3-partitis v. 3-lobatis. Flos ignotus. Achenia villosa, in caudam longissimam usque ad apicem barbato-plumosam producta.

Proxima videtur *C. sulcatæ*, Wall. no. 4667, satis distincta foliorum pinnis brevibus nec longè petiolatis, petiolis dilatatis.

Clematis, *Sectio nova* Bebæanthera (βέβαιος fixus, ab antherâ affixâ nec liberâ). *Antheræ introrsæ barbatæ. Petala* 0. *Involucrum* 0. *Achenia in caudam barbato-plumosam producta. Cotyledones approximatæ.*

5. Clematis barbellata; monoica, pedunculis unifloris axillaribus, foliis ternatisectis; foliolis ovatis acuminatis, antheris introrsis barbatis.

Hab. Himala, in sylvis, ad alt. ped. 8000–9000. Chúr. Junio.

Scandens, glabra. Caulis teres purpurascens. Folia ternatisecta; foliola breviter petiolulata, obliquè ovata, plùs minùs acuminata, lobata, vel inciso-dentata, argutève serrata, serraturis mucronatis, 2–$2\frac{1}{2}$ poll. longa, 1–$1\frac{1}{2}$ lata. Pedunculi axillares numerosi uniflori 2-bracteolati foliis breviores. Sepala subpatentia utrinque velutina purpurea ovata acuminata, apiculo reflexo, 10–12 lin. longa. Fl. ♂: Stamina sepalis duplò breviora;

filamentis dilatatis hirsutis; antheris introrsis, connectivo dilatato fixis, dorso densè hirsuto-barbatis. Fl. ♀: Achenia glabra, caudâ longâ ($1\frac{1}{2}$ pollicari) subæqualiter barbato-pilosâ. Semen pendulum. Cotyledones approximati.

Hæc species sectioni novæ pertinere videtur; unà cum *C. montanâ* a *Cheiropside* differt involucri carens; et dum habitu ad *Atragenem* inque situ etiam cotyledonum accedit, ab istâ differt egentiâ petalorum. At maximè a toto genere nec non tribû differt in formâ staminum et structurâ antherarum, quæ introrsæ sunt ut in *Pæonieis* nec liberæ et extrorsæ ut in aliis omnibus Ranunculaceis; quapropter malim genus novum potiùs quam sectionem instituere, nisi vetet habitus omninò *Clematidis*.

6. THALICTRUM MACROSTIGMA; foliis biternatis; foliolis rotundatis 3-lobis: segmentis mucronulatis, floribus axillaribus solitariis, sepalis scariosis, filamentis longissimis paucis, stylis brevibus, stigmatibus magnis, acheniis stipitatis.

Hab. Himala, ad alt. ped. 7000–9000. Jhillam, in Garhwál Orientali Superiore. Floret Oct.

Herba 1–2 pedalis. Folia subsessilia 2-ternata; foliolis petiolulatis 3-lobis, segmentis integris lobulatisve mucronulatis, basi obtusis subcordatisve. Pedunculi solitarii axillares uniflori, folii longitudine; sepala 4 scariosa, ovata, acuta, trinervia. Stamina 8–12, filamentis longissimis capillaribus; antheris apice mucronatis. Ovaria 7–15 dolabriformia, interiora longiùs, exteriora breviùs stipitata, stylo brevissimo, stigmate dilatato hastato valdè papilloso, marginibus demùm revolutis subfusiformi. Fructus?

7. THALICTRUM SECUNDUM; ramis foliisque biternatis secundis sessilibus; foliolis 3-lobis basi cuneatis, floribus solitariis, stigmatibus dilatatis, acheniis stipitatis.

Hab. Himala, in rupibus, alt. ped. 11,000–13,000. Chúr, Badhrinath. Sept. Oct.

Herba 4–12 uncialis, foliis ramulisque secundis. Folia sessilia biternata; foliolis petiolulatis, basi cuneatis, 3-lobis, segmentis integris 3-crenatisve, nervosis. Pedunculi axillares, foliis duplò longiores, solitarii, 1-flori. Sepala ——? Stamina ——? Styli breves, stigmatibus hastatis dilatatis papillosis, marginibus demùm revolutis. Achenia stipitata, dolabriformia, nervosa.

8. THALICTRUM ELEGANS (*Wall. Cat.* 4728); foliis tripinnatisectis, foliolis cuneatis 3-lobis 3-dentatisve, acheniis longe stipitatis bialatis.

Hab. Himala, in rupibus, alt. ped. 10,000–12,000, in cacumine Montis Chúr.

Herba pedalis parcè ramosa. Folia 1–2 pollicaria 3-pinnatisecta; foliolis minutis 3-lobis, 3-dentatisve, lateralibus obtusis, terminali plùs minùsve acuto. Pedunculi axillares uni-

flori. Flores desunt. Achenia longè stipitata, gibbosa, nervosa, membranaceo-alata, alâ superiore duplò majore; stylo persistente, stigmate mediocriter dilatato, marginibus inflexis subfusiformi. Semen ellipticum glabrum.

Species* distinctissima, acheniis membranaceo-alatis.

9. THALICTRUM PEDUNCULATUM; foliis 3–4-ternatisectis; segmentis petiolatis rotundatis 3-lobis: lobis 3-lobulatis, sepalis 4–5 petaloideis, acheniis 10–11 apice uncinatis.

Hab. Himala, ad alt. ped. 7000–8000 in nemoribus. Simla. Floret Aprili.

Herba bipedalis. Folia 3–4-ternatisecta; vaginâ petioli membranaceâ integrâ; foliolis graciliter petiolatis rotundatis trilobis, basi cuneatis, obtusis, cordatisve, lobis 2–3-lobulatis. Pedunculi 2–3 ex axillâ folii superioris depauperati orti. Sepala petaloidea, 4–5, alba, rotundato-ovata, obtusa. Stamina sepalis breviora, filamentis subdilatatis; antheris muticis. Ovaria gibba striata, 10–12; stylo longo uncinato stigmate brevi subcapitato, nec dilatato. Achenia elliptica compressa breviter stipitata utrinque attenuata, nervis prominentibus simplicibus furcatis vel anastomosantibus striata, stylo longè incurvo uncinata.

Proxima videtur *T. orientali* (Ann. Sciences Nat. xvi. p. 349), at differt carpellis longioribus pluribusque, nec tantùm 3–4, foliolisque magis lobatis.

T. radiato etiam accedit stylis uncinatis foliisque triternatis.

10. ANEMONE (*Homalocarpus*) SCAPOSA; foliis longè petiolatis cordato-palmatis quinquefidis; lobis 3–5 lobatis: lobulis integris 2–3-crenatisve villosis, involucralibus tribus v. quatuor trifidis; lobis oblongis integris dentatisve, pedicellis 5–6 unifloris involucro multò brevioribus, sepalis 5 ovatis extùs puberulis albis, acheniis pilosis, scapo foliis longiore.

Hab. Himala, in pascuis elatis, alt. ped. 10,000–12,000. Chúr. Floret Junio.

Differt ab *A. polyanthi* (eadem ac *A. longiscapa*, Wall.) acheniis pilosis nec glabris, et ab *A. Baikalensi* foliis 5-fidis nec 3-partitis; valdè affinis *A. villosæ*, Royle†.

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* The description of this plant by Mr. Don in Dr. Royle's 'Illustrations' is so inaccurate, that I believed this to be a distinct species, till I saw the specimens in Dr. Royle's herbarium and in that of the Linnean Society. I cannot but imagine that Mr. Don must have accidentally transferred the description of some other specimen to this name and reference.

† Dr. Lindley has described a species much resembling this plant in the 'Botanical Register,' 1844, t. 65, under the name of *A. obtusiloba*, Don, as identical with *A. Govaniana*, Wall. Cat. 4688. But it is totally different from the authentic specimens of that plant in Mr. Bentham's herbarium, and from the description in Don's 'Prodromus,' p. 194; that species having but one flower in the involucre,

11. RANUNCULUS (*Hecatonia*) NEPHELOGENES; acaulis, foliis radicalibus petiolatis glabris lanceolatis cuneatisve integris vel tri-inciso-crenatis, scapo solitario 1–2-foliato 1-floro, petalis subrotundis, acheniis rugosulis rectè acuminatis.

Hab. Himala, in elatis, alt. 17,000–18,000 pedes. Floret Sept. Oct.

Acaulis, uncialis, nec stolonifera. Folia radicalia, petiolata, lanceolata, integerrima v. cuneata 3-inciso-crenata. Scapus solitarius terminalis 1-florus 1–2-foliatus, foliis integris trifidisve, apice pubescens. Sepala basi pilosa, apice glabra, reflexa. Petala subrotunda, lætè aurea, sepalis longiora. Stamina 10–15. Ovaria 0. Achenia rugosula ovata acuminata, stylo recto nec adunco.

Proxime accedit *R. salsugineo, nubigeno, cymbalariæque*, sed ab omnibus differt egentiâ stolonum, formâ petalorum foliorumque et calyce reflexo nec adpresso.

12. RANUNCULUS (*Hecatonia*) RIPARIUS; hirsutus, foliis radicalibus ternatisectis; foliolis petiolatis basi cuneatis 3-partitis: segmentis dentatis acutis, receptaculo elongato piloso, acheniis compressis lævibus stylo incurvo brevissimè apiculatis.

Hab. In ripis arenosis fluminum Indiæ Septentrionalis. Lodihana, Bhogpur in Gange.

Radix fibrosa. Caules numerosi hirsuti ramosi. Folia radicalia petiolata ternatisecta; foliolis petiolatis basi cuneatis 3-partitis, segmentis dentatis acutis pilis paucis adpressis subhirsutis: caulina similia sed gradatim difformia: floralia lanceolata. Flores solitarii axillares, pedunculo folio breviore. Sepala extùs hirtella reflexa. Petala sepalis breviora. Achenia numerosa, in receptaculo elongato piloso spiraliter disposita, compressa, marginata, stylo incurvo (sæpè caduco) brevissimè apiculata. Herba annua pedalis.

R. fibrosæ, Wall. Cat., eidem ac *R. nepalensi*, DeC. no. 113, maximè accedit; differt pluribus notis.

13. RANUNCULUS BREVIROSTRIS; adpressè pilosus, foliis radicalibus longè petiolatis rotundatis palmatim tripartitis; segmentis obtusis 2–3-fidis dentatis, sepalis adpressis, acheniis glabris gibbis marginatis, stylo brevissimo incurvo caduco.

Hab. In uliginosis Himala, alt. ped. 10,000–11,000. Floret Oct. Badhrinath, 1838.

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and therefore not belonging to the section *Homalocarpus*. Dr. Lindley's plant is almost identical with *A. villosa*, Royle, Ill. Bot. Him., differing only in the degree of villosity. My plant differs from both, in having the leaves more and more deeply divided and very much shorter pedicels.

Perennis, 2-3 pedalis, multicaulis. Caules fistulosi adpressè pilosi, ramosi. Folia radicalia longè (petiolo 1-2-pedali) petiolata, rotundata, basi cordata, 3-partita; segmentis 2-3-fidis, inciso-dentatis, obtusis: caulina gradatim minora, segmentis acutioribus: floralia lanceolata. Flores majusculi. Pedunculi dichotomi adpressè pilosi. Sepala hirsuta ovata adpressa, petalis rotundatis duplò breviora, margine membranaceo revoluto. Receptaculum breve glabrum. Achenia glaberrima, apicem versus subrugosa, gibba, marginata, stylo brevissimo incurvo superata, vel sæpiùs stylo caduco obtusa.

Affinis *R. recurvato*; differt calyce non recurvato stylisque brevibus caducis.

Ord. Berberideæ.

14. Berberis (*Sect.* 1.) brachybotrys; spinis 3-partitis, foliis obovatis spinoso-serratis, paniculis foliis brevioribus, baccis subcylindricis rubris.

Hab. Himala, ad alt. ped. 9000–12,000. Chúr, Liti, Badhrinath, &c. Floret Junio. Fructus Sept. Oct.

Frutex humilis 2-3 pedalis, ramis virgatis. Spinæ 3-partitæ, foliis duplo breviores. Folia fasciculata sessilia cuneato-obovata spinoso-serrata vel rariùs subintegra. Paniculæ racemiformes, erectæ, confertifloræ, foliis breviores, ramulis bracteatis trifloris; bracteæ lanceolatæ acuminatæ, florales pedicello longiores. Sepala et petala rotundata. Bacca subcylindrica, stylo brevissimo superata, rubra.

Affinis *B. Kunawarensi*, Royle; differt paniculis brevioribus.

Ord. Nymphæaceæ.

15. Nymphæa (*Cyanæa*) punctata; foliis subpeltatis suborbiculatis sinuato-dentatis glabris subtùs punctatis basi bilobis; lobis approximatis, stigmate 29-radiato.

Hab. In stagnis Prov. Sirhind, Sádhaura. Julio, Septembri.

Folia natantia vix peltata, suborbiculata, obtusè sinuato-dentata, glabra, subtùs immerso-punctata, purpurascentia, basi biloba lobis approximatis. Scapus ad apicem hispidulus. Calyx glabriusculus. Petala oblongo-lanceolata acuta, cærulescentia, 3–5 pollicaria. Stamina basi dilatata, apice in appendicem oblongam foliaceam supra antheras producto. Stigmata circiter 20.

Differt ab omnibus hujus sectionis foliis punctatis.

16. Nymphæa (*Lotus*) sagittata; foliis subpeltatis integris ovato-sagittatis subtùs pubescentibus impunctatis, antheris exterioribus breviter appendiculatis.

Hab. In stagnis Prov. Sirhind, Ambala. Floret Junio, Octobri.

Folia subpeltata, integra, ovata, sagittata, lobis divaricatis, suprà glabra subtùs pubescentia nec punctata. Scapus ad apicem pubescens. Petala oblongo-lanceolata obtusa 1–1½ pollicaria.

Affinis hinc *N. stellatæ* illinc *N. eduli*.

Ord. FUMARIACEÆ.

17. CORYDALIS (*Capnites*) ~~PAUCIFLORA~~ *oligantha*; caule exsquamato, foliis triternatis; foliolis obovatis integris obtusis mucronulatis, racemo paucifloro, calcare elongato obtuso.

Hab. Himala, in sylvis humidis, alt. ped. 7000–8000. Simla. April.

Herba glaberrima, vix erecta, 5–6 uncialis. Radix ——? Caulis simplex, exsquamatus, bifoliatus cum racemo uno, sive racemis duobus cum foliis tribus; folia inferiora opposita 3-ternata, superiora alterna biternata, segmentis primariis longè petiolatis, foliolis obovatis basi cuneatis, apice obtusis mucronulatis, integerrimis; lætè virentia. Racemi terminales 3–4-flori: bracteæ ovatæ integræ denticulatæve acutæ pedicello multo breviores. Pedicellus fructifer elongatus. Sepala minima laciniata non caduca. Petala conniventia purpurascentia. Calcar 6–7 lineas longum, pedicello longius; synematis calcar ad finem ferè istius productum. Siliqua ovata, in stylum persistentem attenuata.

Valde affinis *C. longifloræ*; differt calcaribus brevioribus obtusis, et caule exsquamato.

18. CORYDALIS FLABELLATA; erecta, caule ramoso exsquamato, foliis pinnatisectis; foliolis flabelliformibus glaucis, racemis confertifloris, calcare brevi, siliquâ oblongâ, stylo longo persistente.

Hab. In glareosis Himala, alt. ped. 9000–10,000. Malári, in Garhwál Superiore.

Herba 1–2 pedalis, glabra. Caulis erectus ramosus. Folia crassa alterna pinnatisecta; foliolis flabellatis, emarginatis plùs minùs sinuatis. Racemi axillares terminalesque, ramis superioribus exfoliatis paniculam formantibus. Flores confèrti. Pedicelli breves, bracteâ subulatâ sublongiores. Sepala (non valdè caduca) semisagittata, scariosa, sinuato-dentata. Petala lutea, exteriora apice patentia dorso cristata, cristâ integrâ, mucronata; interiora oblonga basi attenuata, apice rotundata emarginata, latere superiore breviter alata. Calcar breve, pedicello vix longius; synematis calcar breve incurvum. Siliqua ovata, nec inflata, in stylum persistentem attenuata, polysperma; semina nigra, lævia, carunculo parvo sinum tantùm tegente.

Affinis *C. crassifoliæ*, Jacquemont, et cum illo nullæ sectioni Candollianæ referenda.

19. CORYDALIS DEBILIS; foliis 2–3-pinnatisectis; segmentis cuneatis trilobatis

rotundato-obtusis mucronulatis, petiolo vaginante, racemis longis, bracteis 3-dentatis pedicello duplò longioribus, calcare longo obtuso, siliquis obovato-oblongis, stylo persistente.

Hab. In Himala, alt. ped. 9000–10,000, in valle Vishnuganga fluminis infra Badhrinath.

Glabra; caulis debilis ramosus. Folia alterna 2–3-pinnatisecta glauca, petiolis alâ membranaceâ vaginantibus, segmentis cuneatis trilobis rotundato-obtusis mucronulatis. Racemi axillares terminalesque, multiflori. Bracteæ foliaceæ, cuneatæ, tridentatæ, supremæ lanceolatæ acutæ pedicello duplò longiores. Sepala minima scariosa caduca lacinioso-dentata. Petala lutea; exteriora dorso cristata; lateralia unguiculata. Calcar petalis longius; synematis calcar isto dimidio brevius. Stigma 4-lobatum. Stylus filiformis persistens. Siliqua obovato-oblonga, apice truncata, basi attenuata.

Affinis *C. vaginanti, filiformi,* &c.

Ord. Cruciferæ. Trib. Arabideæ.

20. Arabis (*Alomatium*, § 1. DeC.) Himalaica*; pilis bifidis simplicibusve hispida, foliis pauci-dentatis integrisve radicalibus petiolatis caulinis sessilibus amplexicaulibusve obovatis, pedicellis calyce hispido brevioribus.

Hab. In glareosis Himala, alt. ped. 10,000–11,000. Mana. Sept. Oct.

Annua, erecta, 6–10 pollicaris, pilis simplicibus furcatisque hispida, ramulosa. Folia inferiora in petiolum attenuata, superiora sessilia vel amplexicaulia, obovata, denticulata vel integra, hirsuta. Rami, racemum foliaceum formantes, post anthesin elongantur. Pedicelli breves. Sepala erecta hirsuta marginata basi æqualia. Petala parva, limbo dilatato integerrimo lilacina; glandula hypogyna utrinque placentaria 1, valvaria 1 (?). Stamina edentula. Stylus brevis; stigma capitatum. Siliqua teretiuscula compressa 1-nervis, pilis furcatis hispida; semina alternatim biserialia, ovata, rugosula, glabra, immarginata; funiculo brevi filiformi; septo enervi.

21. Arabis (*Alomatium*, § 1. DeC.) amplexicaulis; infrà pilis simplicibus hirsuta suprà glabra, foliis latè ovatis dentatis integrisve, sepalis basi æqualibus glabris, petalis emarginatis, siliquâ longissimâ glabrâ stylo apiculatâ, seminibus alâ parvâ marginatis rugoso-striatis.

Hab. In sylvis humidis, alt. ped. 8000–9000. Chúr; Shioli in Garhwál, &c. Floret Junio.

Annua, erecta; caule tereti vix ramoso, infrà pilis simplicibus hirsuto suprà glabro. Folia

* Himalaicus potiùs quàm Himalensis aut Himalayanus, ut Pyrenaicus, Carpathicus, Altaicus.

radicalia lanceolàta obtusa in petiolum attenuata dentata hirsuta. Folia caulina sessilia amplexicaulia, inferiora latè ovata, grossè dentata, superiora lanceolata integra, plùs minùs hirsuta, pilis simplicibus vel præsertim in nervis furcatis, 1–3 poll. longa, $\frac{1}{2}$–$1\frac{1}{2}$ lata. Racemi elongati, axillares pauciflori, terminales multiflori. Pedicelli calyce longiores, fructiferi elongati. Sepala basi æqualia, obtusa, erecta, glabra. Petala, limbo dilatato emarginato, alba. Stamina, filamentis dilatatis edentulis; antheris oblongis basi cordatis virescentibus; glandula utrinque placentaria 1 magna, valvariæ 2 parvæ; stylus brevis, stigmate subcapitato emarginato. Siliqua longissima (2–3 pollicaris) glabra, stylo elongato apiculata; valvis subenervibus; placentis prominulis; septo hyalino enervi; funiculis longiusculis filiformibus. Semina alternatim uniserialia, alâ parvâ marginata, rugoso-striolata.

22. ARABIS (*Alomatium*, § 3. DeC.) SAXICOLA; pube stellatâ hispidula, ramis efoliaceis, foliis lineari-oblongis integris, pedicellis calyce hirsuto multò longioribus, siliquâ lineari compressâ.

Hab. In glareosis saxosisque in valle fluminis Dhawli, Garhwâl Superioris, alt. ped. 9000–11,000.

Frutex ramosa, pube stellatâ adpressè hispidula. Folia lineari-oblonga, basi attenuata integra. Pedicelli calyce multò longiores. Sepala duo basi subgibbosa hirta. Petala basi attenuata, oblonga, rosea. Glandula placentaria utrinque 1, valvaria 1 (?). Stamina edentula; antheris ovatis basi cordatis. Stylus brevis; stigmate emarginato. Siliqua linearis, compressa, polysperma, valvis 1-nervibus; septo hyalino enervi; placentis internis; funiculis filiformibus. Semina alternatim 1-serialia, ovata, minutissimè rugosula, immarginata.

23. ARABIS ARVENSIS; ramosa, hispida, foliis petiolatis lanceolatis v. ovatis dentatis, racemis axillaribus, floribus subsessilibus, siliquis subteretibus hispidis stylo conico acuto persistente apiculatis.

Hab. In arvis Pentapotamiæ prope Lahor. Mart.

Herba annua, erecta, $\frac{1}{2}$–2 pedalis, ramosa, pilis bifidis stellatisque hispida. Rami subteretes. Folia alterna, omnia petiolata, lanceolata vel ovata, distanter dentata, hispida. Racemi terminales, inflorescentiâ elongati. Flores subsessiles (infimi 1–2 sessiles). Sepala erecta, basi æqualia, oblonga, membranaceo-marginata, hirsuta. Petala unguiculata, exserta, limbo dilatato obovato roseo? Stamina edentula. Antheræ longæ sagittatæ. Glandulæ nullæ? Stigma conicum, acutum. Siliqua longa, subteres, pube stellatâ subhispida.

Affinis *A. Cebennensi.*

24. Arabis (*Lomaspora; Catalobus*, Meyen) pterosperma; erecta, foliis pilis 2–3 furcatis hispidulis sessilibus denticulatis, pedicellis calyce glabro duplò longioribus, siliquâ gracili patente polyspermâ, seminibus alatis rugosis.

Hab. In Himala, alt. ped. 9000–10,000. Badhrináth.

Erecta, ramis filiformibus pube bi- trifurcatâ hispidulis. Folia caulina sessilia, obovata vel oblonga, denticulata vel integra. Racemi terminales, post anthesin elongati. Pedicelli calyce longiores. Sepala basi æqualia, ovata, obtusa, marginata, glabra. Petala oblonga, basi attenuata. Stamina edentula. Glandulæ utrinque valvariæ 2, placentariæ 0. Stylus brevis. Stigma capitatum. Siliqua longissima, polysperma, compressa, glabra, suberecta, vix patens; valvis dorso 1-nervibus, septo enervi hyalino. Semina alternatim 1-seriata, alata; testâ præsertim in alâ rugosâ; funiculo filiformi longo.

Affinis *A. Canadensi.*

Trib. Sisymbrieæ.

25. Sisymbrium (*Arabidopsis*) rupestre; pilis furcatis stellatisque hispidum, foliis radicalibus obovatis caulinis oblongis integerrimis denticulatis, pedicellis calyce hirto longioribus, siliquis pilosis rectis.

Hab. In Himala, alt. ped. 13,000–15,000. Gastoli supra Mána.

Herba erecta, parcè ramosa, palmaris, pilis furcatis stellatisque hispida. Folia crassiuscula hispida; radicalia obovata in petiolum attenuata; caulina sessilia, oblonga, denticulata. Racemi paucifoliati. Pedicelli calyce longiores, ebracteati, fructiferi patentes. Sepala erecta, angustè ovata, acuta. Petala oblonga, angusta, alba. Stamina edentula. Antheræ ovatæ. Glandula utrinque placentaria 1, valvaria 1. Siliqua subteres, compressiuscula, subpilosa. Semina alternatim uniseriata; cotyledones incumbentes.

Affinis *S. contortuplicato.*

Sisymbrium *Columnæ*, omninò similis speciminibus Europæis.

Hab. In Himala, alt. ped. 9000–11,000. Pharkia prope Niti.

Thlaspi *perfoliatum*, non discernendum ab Europæo (fructu immaturo).

Hab. In Himala, alt. ped. 7000–8000. Simla.

Lepidium *incisum* (Ledebour, Fl. Alt. iii. p. 191), omninò eadem ac species Altaica.

Hab. In Himala, alt. ped. 12,000–13,000. Músapáni supra Mána.

Ord. Polygaleæ.

26. Polygala (*Polygalon*) scabra; ramis strictis paucifoliatis foliisque scabris, calycis alis obliquè ovatis 3-nervibus, capsulâ sessili glabrâ.

Hab. Himala, in rupibus apricis frequens, alt. ped. 3000–6000.

Suffrutex; ramis strictis virgatis pedalibus paucifoliatis; petiolis decurrentibus, subangulatis, scabris. Folia distantia, breviter petiolata, linearia, utrinque acuta, mucronata, scabra. Racemi terminales; pedicelli remoti, bracteis 3 scariosis acutis longiores, calyce breviores. Sepala 3 exteriora ovata, 1-nervia, scariosa, interioribus duplò breviora. Alæ obliquæ, ovatæ, 3-nerves. Corolla alis inclusa, rosea; petala lateralia ungue uno latere minutè ciliata, limbo dilatato truncato; carina galeata cristâ fimbriatâ. Capsula glabra, sessilis, obliquè obovata, emarginata, alata.

Affinis *P. roseæ*, differt alis minoribus et capsulâ sessili; a *P. oligophyllâ* et *leptaleâ*, Wall. (quæ meo sensu eadem species est) differt inflorescentiâ laxiore, alis latioribus, et caule minùs alato; ab omnibus hujus sectionis scabritie foliorum.

Ord. CARYOPHYLLEÆ. Trib. SILENEÆ.

27. SILENE (*Otites*) MULTIFIDA; pubescens, caule simplici, foliis lanceolatis ovatisve amplexicaulibus inferioribus in petiolum attenuatis, racemis axillaribus, floribus erectis, calyce viscoso, petalis ecristatis bipartitis; segmentis multifidis.

Hab. Himala, ad alt. ped. 8000–9000, in apricis prope pagum Ghillum, Garhwal Superioris.

Pubescens, pube adpressâ simplici. Caules crassi, stricti, erecti. Folia opposita vel terna, pubescentia, margine undulata; inferiora lanceolata, basi in petiolum amplexicaulem attenuata; superiora ovata, acuta, amplexicaulia. Racemi pauciflori, axillares. Flores erecti vel divergentes nec penduli. Calyx strictus, cylindricus, decem-striatus, breviter 5-dentatus, petalis multo brevior, viscosus. Anthophorus brevissimus. Petala alba, ecristata, 2-partita, segmentis 2-fidis, lobis 2–4-fidis. Stamina pubescentia, breviter exserta. Styli 3–4.

Affinis *S. viscosæ*.

28. MELANDRIUM (*Lychnis*, sect. *Gastrolychnis*) PILOSUM; piloso-pubescens viscosum, foliis latè ovatis, calyce inflato 10-nervi 5-dentato, petalorum glabrorum laminis bipartitis; segmentis bifidis; dentibus coronariis 2 brevibus.

Hab. Himala, ad alt. ped. 12,000–13,000. Músapáni supra Mána in Garhwal.

Herba 1–2-pedalis, debilis, densè piloso pubescens, viscosa, caule tereti; folia latè ovata, subsessilia, opposita, piloso pubescentia. Ramuli bifoliati, uniflori. Flores terminales axillaresque, solitarii, erecti. Calyx vesiculoso-inflatus, pubescens, viscosus, 10-nervis, 5-dentatus, petalis brevior. Petala alba, glabra, laminis bipartitis, segmentis bifidis, dentibus coronariis 2 brevibus. Genitalia breviter exserta.

Affinis *M. inflato*.

Trib. Alsineæ.

29. Stellaria (*Schizostegium*) paniculata; foliis glabris lanceolatis acuminatis petiolatis marginatis, calyce glanduloso piloso petalis 2-fidis longiore, capsulâ monospermâ.

Hab. In nemoribus, alt. ped. 9000–10,000. Jauglig, mense Octobri.

Ramosissima, ramis fistulosis, elongatis, glaberrimis, lævibus, lucidis, uno latere lineâ pilosâ pilis simplicibus notatis. Folia ovato-lanceolata, acuminata, inferiora petiolata, superiora vix subsessilia; petiolo ciliato; glabra vel minutè scabro-pilosa, nervo submarginata, quandoque crispata. Paniculæ axillares terminalesque, dichotomæ, multifloræ. Pedicelli calyce longiores bracteæque ovatæ acutæ glanduloso-pilosi. Calyx 5-phyllus, glanduloso-pilosus; sepalis ovatis, membranaceo-marginatis, obtusis. Petala calyce breviora, vix ultra medium bifida; segmenta divaricata. Stam. 10; filamenta basi dilatata, subconnexa; antheris ovalibus. Styli 3 breves; ovarium apice rugosum. Capsula 3-valvis; semen solitarium, magnum, aciculatum.

Differt a *S. monospermâ* (*crispatâ*, Wall.) foliis petiolatis et sepalis glanduloso-pilosis.

30. Stellaria (*Larbrea*) decumbens; caulibus subtetragonis radicantibus pilosis, foliis sessilibus subulatis, sepalis glabris acutis, petalis minimis bifidis, stylis 3–4, pedicellis axillaribus solitariis longis.

Hab. Himala, ad alt. ped. 10,000–11,000. Badhrinath. Oct.

Decumbens, ramosissima, ramis subtetragonis breviter pilosis. Folia sessilia, amplexicaulia, subulata, acuta, subtrinervia. Pedicelli axillares, 1-flori, longi. Calyx 4–5-phyllus, glaber, sepalis subulatis, acutis, marginatis, petalis plus duplo longioribus. Petala 3, 4, 5 vel 0, minuta, bipartita, segmentis linearibus divaricatis. Stamina 8–10; filamentis basi dilatatis. Styli 3–4. Capsula 3–4-valvis, valvis 2-fidis. Semina ovoidea, minutè aciculata.

Ord. Malvaceæ.

31. Abutilon oxyphyllum; foliis cordato-ovatis acuminatis crenato-dentatis, pedicellis unifloris, calycis laciniis acuminatis, carpellis 6–8 vix calyce longioribus, staminibus brevissimè monadelphis.

Hab. Himala, ad alt. ped. 2000–3000, prope Kilini in valle Alaknunda, Garhwal.

Suffrutex; ramis teretibus, glabris, pubescentibus vel pilosis. Folia longè petiolata, cordato-ovata, acuminata, plùs minùs grossè crenata crenato-dentata sive dentata, velutina; petiolo apicem versus piloso, infrà pubescente vel glabro. Calyx 5-partitus, velutinus, laciniis

acuminatis capsulas fructiferas ferè æquantibus. Corolla rotata, majuscula, flava (1½-2 pollices in diametro lata). Stamina in columnam brevissimam fornicatam pilosam connexa, filamentis suprà longis liberis filiformibus, antheris equitantibus reniformibus. Styli 6–8 longi. Carpella 6–8, 4–5 sperma, velutina, suturâ tantum piloso-ciliata, in cornu breve rectum divaricatum producta. Semina glabra, rugosa, parcè verrucosa.

Affinis *A. polyandro*, a quo differt calyce longiore. Nomen Wallichianum servavi quia *Sida oxyphylla* nunc in Sidis veris retinenda, nec huc revocanda.

32. ABUTILON RAMOSUM.

β. velutinum nec piloso-viscosum. Provincia Sirhind, ruderatis, Bhilchapper, &c. Differt pubescentiâ velutinâ a plantâ Africanâ (secundum descriptionem Guillemin et Perrottet in Floræ Senegambiæ Tentamine), quæ viscosa; et a speciminibus Kordofanis, quæ pilosa sunt.

Ord. AMPELIDEÆ.

33. LEEA ASPERA (*Wall. in Roxb. Fl. Ind.* ii. p. 468, *in notâ*). Herbacea, foliis bipinnatis pinnatisve; foliolis cordato-ovatis acuminatis utrinque pilosis, cymis axillaribus, antheris liberis.

Hab. Himala, ad alt. ped. 3000–5000.

Herbacea, erecta, 2–4 pedalis, caule pubescente nec crispato. Folia pauca; inferiora bipinnata, superiora uno latere tantùm bipinnata vel pinnata, petiolo exalato; foliolis (5–6 pollices longis, 2–3 latis) cordato-ovatis, subiter acuminatis, æqualiter crenato-dentatis, parallelè penninervibus, utrinque scabris et pilis sparsis (præsertim in medio intra nervos) hispidulis, petiolatis; petiolulis breviter alatis, alâ ad basin folioli expansâ. Cymi decompositi; pedunculi pubescentes (breviusculi, 2–3 poll. longi); bracteis subulatis, hispidis, glandulâ lucidâ terminatis; pedicelli hispidi, bracteolis ovatis obtusis scariosis. Calyx 5-dentatus, dentibus obtusis; petala basi connexa, revoluta, oblonga, obtusa, utrinque glanduloso-scabra. Staminum urceolus brevis; filamentis sterilibus oblongis 2-dentatis; fertilibus petalis oppositis, apice liberis; antheris supra medium affixis, ovatis, introrsùs inter se liberis. Stylus longiusculus, antheras æquans. Bacca nigra.

34. LEEA ALATA. Herbacea, foliis pinnatis, petiolo alato, foliolis subsessilibus oblongis serratis, cymis longè pedunculatis, antheris connexis.

Hab. Himala et in Montibus Sivalicis, ad alt. 3000 ped.

Leea rubra, *Royle, Illustr.* (*nec Blume.*)

Herbacea, erecta; caule scabro, glabro, sulcato. Folia pinnata; petiolo sulcato, alato; foliolis inferioribus brevissimè petiolulatis petiolo alato; superioribus sessilibus, alâ petioli

in glandulam reductâ; oblongis, penninervibus, nervis tertiariis cum nervo medio rectum angulum formantibus, reticulatis, glabris, suprà scabris, subtùs lævibus (6–8 poll. longis, 2 latis). Pedunculi longi (8-poll.); cymi decompositi, bracteis caducis; pedicelli densè ferrugineo-pubescentes, bracteolis subulatis, acutis, glanduloso-ciliatis. Calyx 5-fidus, dentibus acutis. Corollæ laciniæ subemarginatæ. Stam. sterilia oblonga, emarginata; antheræ lateribus inter se connexæ, filamentis supra medium affixæ.

Differt a *L. hirtâ* foliolis glabris, sessilibus, petiolisque alatis, apice glanduliferis.

Ord. Balsamineæ.

Gen. Impatiens. *Charactere quoad florem emendato*†.

Sepala 5; duo superiora minima, quandoque nulla; duo lateralia simplicia; inferius magnum, plùs minùs inflatum et calcaratum. *Petala* 5; 1 superius, intra sepala duo squamiformia, magnum, plerumque dorso cristatum (*vexillum*); 4 lateralia, quorum duo utrinque inter se coadunata, unum bilobum efformantia (*alæ*).

* *Racemi axillares terminalesque, subumbellati, 2–10-flori, pedicellis bracteolatis; alæ* ~~2-calcaratæ~~ *bilobæ.*

§. *Folia sessilia; flores purpurei.*

35. Impatiens amplexicaulis; foliis oblongis sensim acuminatis argutè crenato-serratis, galeâ obtusâ calcare subiter incurvo, vexillo subrotundo, capsulâ tereti acutâ.

Hab. Himala, in umbrosis, alt. ped. 7000–8000. Simla, Sambi.

Caulis erectus, parcè ramosus (1–3 pedalis) 4-angularis, ad nodos glandulosus, purpurascens, glaber. Folia sessilia, inferiora opposita, superiora alterna, subamplexicaulia, ad basin glandulâ hemisphæricâ stipulata, oblonga sensim acuminata, argutè crenato-serrata, ser-

† I have ventured to propose a modification of the character of *Impatiens*, because I consider M. Kunth's theory of the flower to be not entirely correct. He conceives the superior petal to be wanting, and the two superior sepals to be united into the vexillum, regarding the keel usually more or less present on that to be a mark of the junction. But I have found the two superior sepals actually present in some species: they are distinct in *I. amplexicaulis* and *moschata*, herein described, and even more so, though still very minute, in the Cashmir species introduced into England by Dr. Royle under the name of *I. glanduligera*, and figured by him in his 'Illustrations of Himalayan Botany.' In other species a rudimentary scale, or in others, again, a gland supplies their place; while in many I have been totally unable to detect any. I think therefore that I am justified in considering the vexillum as a single petal, and not as composed of two sepals united. I have since found that a similar view has been taken by M. Roeper in the 'Linnæa,' vol. ix. p. 121.

raturis in latere superiore ad medium mucronulatis. Bracteolæ ovatæ membranaceæ. Sepala 2 superiora ad basin vexilli minuta, obliquè oblonga v. falcata, 2–3-dentata, margine glandulosa: 2 lateralia obliquè cordata: inferius galeæforme, subobtusum, subiter in calcar breve ad rectum angulum incurvum obtusum integrum desinens. Petala: vexillum subrotundum: alæ inæqualiter bilobæ, lobo inferiore subrotundo, superiore ovato maculato. Capsula subcylindracea apice acuta. Sapore *Tropæoli nasturtii*.

§§. *Folia petiolata, ovato-lanceolata, basi obtusa.*

36. IMPATIENS MOSCHATA; foliis crenato-serratis serraturis apice mucronulatis glandulis stipulaceis auriculatis, galeâ obtusâ, capsulâ clavatâ.

Hab. Himala, in sylvis, alt. ped. 8000–9000. Mahaseo.

Glaberrima, erecta, ramosa; caulis sub lente canaliculatus, purpurascens, (3–6 pedalis). Folia subverticillata et alterna, grossè argutè serrata, serraturis apice mucronatis, basi obtusa æqualia vel obliqua, apice longè acuminata; petiolo glandulis 2 auriculatis stipulato. Pedicelli apice incrassati, bracteolis ovatis lanceolatisve acutis. Flores rosei. Sepala 2 superiora lateralibus plus duplò breviora, ovata; lateralia obliquè cordata, vexillo breviora; inferius galeæforme, pallidum, subiter in calcar breve recurvatum desinens. Vexillum alis brevius, subrotundum. Alæ bilobæ, lobo inferiore lanceolato acuto, superiore rotundato apiculato. Capsula subpentagona, subverrucosa, apiculatè fusiformis v. clavata. Semina subsphærico-turbinata, rugosissima, albo- et brunneo-variegata, odore pessimo moschato.

Affinis *I. glanduligeræ*, Royle (Roylei, *Walpers*): differt foliis grossiùs serratis, minùs glandulosa. Affinis etiam *I. macrochilæ*, Bot. Reg. vol. xxvi. t. 8.

§§§. *Folia petiolata, lanceolata, utrinque attenuata, crenato-serrata; mucrone in crenis vel terminali laterali vel basilari in latere superiore.*

a. Flores majusculi; alæ obliquæ.

37. IMPATIENS GIGANTEA; mucrone crenarum laterali, glandulis petiolaribus nigris ampullaceis, galeâ magnâ amphoræformi obtusissimâ subitò in calcar incurvum filiforme desinente, capsulâ tereti.

Hab. Himala, ad alt. ped. 9000–10,000. Hattu, Kamalori, Jaglig, &c.

Herba glaberrima, annua, 4–15 pedalis. Caulis fistulosus (quandoque 5 pollices in diametro) teres, ad nodos glandulis sparsis, ramosus. Petioli utrinque glandulis 2 nigris ampullaceis ad basin folii instructi; crenarum mucrone in medio lateris superioris lateralis.

Racemi plerumque pauciflori; bracteis lanceolatis apice glandulosis. Sepala superiora 0 vel minutissima, lateralia obliquè cordata; inferius apice prolongato acuto, amplum amphoriforme, obtusissimum, subitò calcari tenui rectangulè recurvato terminatum, purpureum. Alæ bilobæ, roseæ, lobis dolabriformibus, inferiore longiore. Vexillum rotundatum, dorso subcarinatum. Capsula teres æqualis, breviter acuta. Semina rugosa.

38. IMPATIENS AMPHORATA; crenarum mucrone basilari, glandulis stipulaceis pedicellatis, galeâ amphoræformi obtusissimâ; calcare incurvo, alarum lobis inæqualiter dolabriformibus, vexillo cristato, capsulâ lineari subtereti.

Hab. Himala, in sylvis, alt. ped. 5000–7000; vulgatissima. Simla, &c.

Glaberrima, erecta, 1–3 pedalis, purpurascens; caulis ramosus, teres, ad nodos tumidus. Folia alterna, serraturis prope basin mucronulatis; petiolo glandulis 2 pedicellatis stipulato. Pedicelli 2-glandulosi. Flores purpurei. Sepala 2 superiora glanduliformia v. nulla, 2 lateralia obliquè cordata; inferius amplissimum amphoræforme obtusissimum, subitò calcare longiusculo sursùm incurvo terminatum. Vexillum ovatum, extùs carinato-alatum, acutè cristatum. Alæ bilobæ, lobis inæqualibus dolabriformibus. Capsula teres, linearis. Semina striata, rugosula.

39. IMPATIENS UMBROSA; mucronulo serraturarum supra medium laterali, glandulis stipulaceis obtusis sessilibus, pedicellis glandulosis, galeâ subamphoriformi sensim in calcar attenuatâ, capsulâ tereti subtorulosâ.

Hab. Himala, ad alt. ped. 7000–8000 in sylvis. Simla.

Glaberrima, erecta, ramosa, vix purpurascens, 1–2 pedalis; caulis striatus. Petiolus glandulis 2 obtusis stipulatus. Folia alterna, serraturis supra medium lateraliter mucronatis. Pedicelli apice incrassati, glanduligeri. Sepala 2 superiora 0 v. glanduliformia; 2 lateralia obliquè cordata; inferius largum, ampliatum, faucis apice elongato apiculato, ex amphoriformi infundibuliforme, sensim in calcar incurvum attenuatum. Vexillum breve, rotundatum, carinatum, apiculatum. Alæ bilobæ, lobo inferiore longiore oblongo, superiore rotundato. Capsula teres, linearis, subtorulosa. Semina glabra, lævissima, rugosula.

40. IMPATIENS PALLENS; mucronibus serraturarum subbasilaribus versus apicem folii longis glanduligeris, glandulis stipulaceis inæqualibus auriculæformibus, pedicellis incrassatis eglandulosis, galeâ sensim in calcar involutum attenuatâ, capsulâ tereti subtorulosâ oligospermâ.

Hab. Himala, ad alt. ped. 3000–6000, ad ripas rivulorum Garhwal.

Glaberrima; caulis basi nudus, teres, striatus, vix ramosus (pedalis); petiolus glandulis 2 inæqualibus cochleatis vel auriculæformibus stipulatus. Crenarum mucrones subbasilares, versus apicem folii longi glanduligeri. Pedicelli apice incrassati, eglandulosi. Sepala 2 superiora minima, vexillo subadnata; lateralia cordata; inferius fauce ampliato campano-infundibuliforme, apice dorso mucrone cristato sensim in calcar elongatum apice subinvolutum attenuatum, intùs maculatum. Alæ bilobæ; lobo inferiore longè obongo, superiore gibbosè rotundàto. Vexillum breve, carinàtum, apiculatum. Capsula teres, linearis, utrinque attenuata, acuta, subtorulosa, basi longiusculè asperma. Semina pauca 2–4, rugosa.

A præcedenti differt staturâ minore, colore pallidiore, crenarumque mucronibus longioribus subbasilaribus; an satis distincta?

§§§ *b. Parvifloræ, alis plùs minùs anticè planis conniventibus; sepalis lateralibus ovatis nec cordatis, inferiore fauce minùs ampliato, calcare rectiusculo.*

41. IMPATIENS LAXIFLORA; caule subalato, mucronibus serraturarum basilaribus, glandulis stipulaceis utrinque 3–4 sessilibus.

Hab. Himala, ad alt. ped. 7000–9000, ad ripas rivulorum Serain, &c.

Glabra; caulis erectus, teres, ad nodos tumidus, 2–4 pedalis, petiolis decurrentibus subalatus; mucrones crenarum omninò basilares; petiolus glandulis 3–4 parvis sessilibus stipulatus. Racemi multiflori, pedicellis longis, apice incrassatis, glandulosis, bracteis ovatis in apiculos glanduligeros contractis. Sepala superiora 0; lateralia parva ovata; inferius, fauce brevi in calcar tubulosum rectum vix apice tortum sensim elongatâ, albidum, maculis luteis purpureisque notatum. Alæ bilobæ, lobo superiore erecto obovato pallido luteo-maculato, inferiore plano lanceolato roseo; vexillum rotundatum cucullatum dorso mucronatum. Capsula teres, subtorulosa, seminibus rugosis.

42. IMPATIENS MICRANTHEMUM; mucronibus crenarum basilaribus, foliis ad basin glandulis 2 stipitatis utrinque instructis, glandulis stipulaceis sessilibus.

Hab. Himala, ad alt. ped. 9000–10,000. Kranda, Hattu, &c. apricis humidis.

Glabra; caulis erectus, ramosus, teres, glandulis nigris sparsus, petiolo decurrente subalatus, $\frac{1}{2}$–4 pedalis; foliis utrinque glandulis 2 stipitatis prope basin ad marginem instructis; racemi 3–4-flori; bracteis lanceolatis apice glandulosis; pedicelli incrassati eglandulosi;

sepala 2 superiora glanduliformia; lateralia parva lanceolata; inferius tubulosum sensim in calcar rectum prolongatum, fauce brevi suprà apiculatâ. Alæ bilobæ conniventes; lobo superiore elliptico, inferiore rotundato. Vexillum cucullatum, hemisphæricum. Capsulæ subteretes, virides; semina foveolato-rugosa, lineis incrassatis irregulariter notatis. Flores minimi, albidi, galeâ roseo luteoque maculatâ.

β. parva, 4–6 pollicaris, omni parte minor; calcar sæpè in sacculum parvulum reductum.

Hab. Rupibus umbrosis. Hattu.

Forsàn eadem ac *I. candidâ*, Lindl. in Bot. Reg. vol. xxvi. p. 85.

43. IMPATIENS ELATA; erecta, glabra, ramosa, pallida, glandulis nigris sparsa, crenarum mucronibus subapicularibus ad basin folii glanduligeris, calcare recto, vexillo cucullato, capsulâ tereti, seminibus rugosis.

Hab. Himala, ad alt. ped. 10,000–11,000. Pharkia.

Erecta, 2–4 pedalis, ramosa; caulis pallidè virens, glandulis nigris sparsus, petiolis decurrentibus subalatus; crenarum mucronibus subapicularibus, ad basin folii elongatis glanduligeris. Petiolus glandulis oblongis porrectis stipulatus; racemi pauciflori; pedicelli apice incrassati, glandulosi; flos minimus, albidus; calcar rectum; vexillum cucullatum; alæ subplanæ. Capsula teres, linearis, oligosperma; semina regulariter rugoso-striata.

44. IMPATIENS RACEMOSA (*Wall. Cat.* no. 4730); erecta, parva, floribus luteis, calcare recto, crenarum mucronibus basilaribus.

Hab. Himala, ad alt. ped. 7000–8000. Lingarta in rupibus.

Parvula (4–10 pollicaris), vix ramosa, glaberrima. Caulis infrà teres, suprà subangulatus, maculatus; crenarum mucrones omninò basilares. Bracteolæ minimæ, glandulosæ. Calcar, fauce brevi, longum, rectum v. subincurvum. Vexillum dorso carinato-cristatum, cucullatum. Capsula linearis, teres.

** *Inflorescentia ut suprà in §§§ b. Alæ 3–4-lobatæ v. caudatæ.*

45. IMPATIENS TINGENS; crenarum mucronibus subbasilaribus, glandulis stipulaceis, sepalis lateralibus minimis, calcare subrecto alarum caudas includente.

Hab. Ad ripas rivulorum Himala, ad alt. ped. 8000–9000. Nagkanda, Dhobri, &c.

Caulis teres, ad nodos tumidus, glaber, ramosus, pallidè virens, glandulis nigris sparsus, petiolis decurrentibus subalatus. Petioli utrinque glandulis parvis auriformibus stipulati.

Crenarum mucrones subbasilares; inferiores elongati, glanduligeri. Racemi 2–15-flori; bracteis ovatis apice glandulosis, pedicellis apice incrassatis eglandulosis. Sepala superiora 0; lateralia minima, obliquè ovata, acuta, mucronata; inferius tubulosum margine brevissimo acuto, basi quandoque rugosum, sensim in calcar longum, rectum vel arcuatum prolongatum. Alæ 3–4-lobæ: lobus (petalum) superior 1–2-lobus: segmento inferiore rotundato; superiore dentiformi acuto v. nullo: lobus (petalum) inferior bilobus: segmento superiore semiovali plano, latere recto ad alam alteram approximato; inferiore longo lineari-acuminato, intra sepali calcar porrecto incluso. Vexillum rotundum, cucullatum, dorso vix cristatum. Capsula teres, acuta. Semina rugosa.

Species ab aliis mihi notis distinctissima; variat floribus roseis vel albis, majoribus vel minoribus. Herba 2–3 pedalis, ramosissima; sicca, herbarium colore flavidè fusco tingens.

Ord. GERANIACEÆ.

46. GERANIUM GRANDIFLORUM; pubescens, caule adscendente vix ramoso, foliis longè-petiolatis palmato-5-fidis: segmentis lobato-dentatis, pedunculis foliis longioribus bifloris, sepalis apiculatis, petalis integris, capsulis pilosis.

Hab. Himala, in pascuis elatis alt. ped. 9000–12,000. Mána, Jangling, &c.

Herba bipedalis; caulibus teretibus, adscendentibus, vix ramosis, pilis simplicibus deflexis pubescentibus. Folia longè petiolata, palmatim 5-partita, segmentis lobato-dentatis, mucronulatis, inferiora rotundata, caulina opposita, basi cordata. Pedunculi axillares, foliis longiores, biflori; bracteis in utroque pedicello binis subulatis, acutis, hirsutis, marcescentibus. Pedicelli et sepalorum nervi pilis subviscosis patentibus tomentosi. Sepala ovata, obtusa, longè apiculata, margine membranaceo-ciliata, intra nervos pubescentia. Petala magna, integra, purpurea. Capsulæ densè tomentosæ; rostro longo, pubescente, scabro.

G. *molle.*

Hab. Himala, alt. ped. 2000–3000. Synj.

G. *Robertianum.*

Hab. Himala, alt. ped. 8000–9000. Pandkesar.

Ord. XANTHOXYLACEÆ.

47. XANTHOXYLON OXYPHYLLUM; frutex aculeatus, foliis alternis pinnatis; petiolo exalato nervisque mediis foliorum quandoque aculeatis, foliolis bre-

viter petiolulatis lineari-lanceolatis acuminatis serratis terminali sursùm inflexo, paniculis paucifloris terminalibus folio multotiès brevioribus, carpellis rubris bivalvibus dispermis stylo persistente apiculatis, seminibus pisi magnitudine: testâ nigrâ lævi nitidâ.

Hab. Himala, in sylvis alt. ped. 4000–5000. In Garhwál Occidentali.

Ord. Ochnaceæ.

48. Ochna collina; suffrutex glaberrimus, ramis teretibus basi stipulis persistentibus squamatis, foliis breviter petiolatis ovato-lanceolatis tenuiter serratis, stipulis intra-petiolaribus apice plerumque bifidis (e duabus lateralibus connexis), pedunculis axillaribus folium æquantibus 3-floris, pedicellis basi bracteatis infra medium articulatis, sepalis 5 latè ovatis, petalis 5 rotundis integerrimis aureis, filamentis antheris subtetragonis brevioribus, stylo indiviso staminibus longiore, stigmate capitato.

Hab. In collibus glareosis sub-Sivalensibus sub *Shoreis robustis*, prope Sakrauda, Saharunpoor. Floret Aprili.

Forsàn eadem ac *O. nana*, Royle Illust. vel *O. pumila*, Don, *O. humilis*. Fructum non vidi.

Ord. Rhamneæ.

49. Zizyphus oxyphylla; aculeata, spinis binis breviore vix recurvâ, foliis obliquè ovatis acuminatis, floribus axillaribus solitariis paucisve fasciculatis.

Hab. Himala, ad alt. ped. 4000–7000. Floret Septembri.

Frutex; ramis teretibus purpurascentibus. Folia alterna, petiolata, 3-nervia, ovata, acuminata, basi obliquè subcordata vel cuneata, minutè ac argutè serrata, serraturis mucronatis; utrinque glabra v. sub lente in nervis puberula; spinæ stipulaceæ binæ, longior recta, brevior patens vix recurva. Flores axillares, pedunculati, solitarii vel 3–4 fasciculati; calyx 5-dentatus, dentibus acutiusculis. Petala spathulata, cucullata, antheram amplectentia. Stylus crassus; stigmate subcapitato emarginato. Fructus . . . . .

50. Rhamnus (*Alaternus*) procumbens; ramis prostratis, foliis coriaceis lanceolatis utrinque acutis mucronato-serrulatis, floribus 1–2 axillaribus, stylis 3, petalis 0, drupâ 3-spermâ.

R. rupestris, *Royle Illustr.* p. 169. (*non Scop. nec Vill.*)

Hab. Himala, in rupibus alt. ped. 7000–8000. Deobun. Fl. Junio.

Frutex; rami prostrati ramosi, juniores pubescentes, veteres cortice albido verrucoso. Folia alterna, coriacea, glabra, bistipulata, brevè-petiolata, mucronato-serrata, lanceolata, plerumque utrinque acuta, vel rariùs ovata obtusa. Stipulæ persistentes, subsetaceæ. Pedicelli axillares, uniflori, solitarii vel bini. Calyx 5-fidus; segmentis latis, acutis, 3-nervibus, deflexis, demùm caducis; ideò in fructu quasi circumscissus. Petala 0. Stamina 5, cum calycis segmentis alternantia. Styli 3 longiusculi, divaricati, apice revoluti. Drupæ 3-spermæ.

Affinis *R. Wightiano*; differt foliis multò minoribus, petalis nullis.

51. RHAMNUS (*Frangula*) PURPUREUS; arboreus, inermis, foliis ovatis acuminatis serrulatis, floribus axillaribus solitariis binisve, petalis 0.

Hab. Himala, ad alt. ped. 8000–10,000, in sylvis. Chúr. Floret Junio.

Arbor mediocris, inermis; rami purpurascentes, albo maculati. Folia petiolata, ovata, breviter acuminata, perninervia, leviter ac argutè serrata, serraturis mucronulatis, juniora pube caducâ vestita, citò glabrata. Stipulæ subulatæ, caducæ, basi dilatatâ persistente. Pedunculi 1-flori, 1–3, axillares, nutantes. Calyx 5-dentatus, dentibus acutis. Petala 0. Stamina 5, filamentis brevissimis, cum calycis segmentis alternantia. Styli 3; stigmate capitato emarginato. Fructus .....?

Affinis videtur habitu *R. alpino* at floribus valdè distinctus.

Ord. ROSACEÆ. Trib. AMYGDALINÆ.

52. AMYGDALUS HUMILIS; frutex, foliis breviter petiolatis lanceolatis argutè serratis, floribus sessilibus, calycis tubo longo striato 5-dentato; segmentis brevibus crenulatis intùs puberulis; tubo intùs glabro basi tantum puberulo, petalis brevibus obovatis basi cuneatis glabris, filamentis glabris, stylo longo, ovario glabro, fructu ?

Hab. Himala, ad alt. ped. 9000. Malari in Garhwál Orientali Superiore.

Differt ab *A. nanâ* foliis ratione latitudinis multò brevioribus, tubo calycis longiore, petalisque brevioribus.

Trib. DRYADEÆ.

53. SIBBALDIA CUNEATA; procumbens, foliis ternatis; foliolis cuneatis apice truncatis 2–5-inciso-dentatis, petalis obovatis calycem æquantibus, staminibus 5–10, acheniis glabris striato-rugosis.

Hab. Himala, in rupibus elatis alt. ped. 11,000–14,000. Liti, Chúr, Mána.

Cæspitosa, procumbens, omninò pilis sparsis hirsuta. Folia ternata, petiolata; petiolis longiusculis; stipulis adnatis, oblongis, apice liberis, acutis, scariosis; foliolis ovatis, basi cuneatis, apice truncatis, medio 3–5 lateralibus 2–3-inciso-dentatis, dentibus obtusis mucronatis. Caules floriferi, vel foliis radicalibus breviores pauciflori, vel erecti ramosi multiflori corymbosi; foliis floralibus gradatim difformibus, ultimis lanceolatis. Calycis laciniæ acutæ, interiores lanceolatæ, exteriores breviores, lineares. Petala 5 obovata, integra, obtusa, calycem subæquantia; stamina 5–10, semper 5 cum petalis alternantia, quandoque 1–5 eis opposita. Styli laterales. Ovaria glabra, rugosula, pauca. Receptaculum pilosum; achenia glabra, leviter striato-rugosa.

Variat α. scapis minimis, petalis latioribus; vel β. scapis erectis corymbosis 6-pollicaribus, petalis angustioribus.

A *Sib. procumbente* differt petalis obtusis nec acutis, et multò majoribus. Folia et habitus omninò *Potentillæ cuneatæ*, cujus flores in specimine Wallichiano in herbario Benthamiano verè Potentilleos et majusculos examinavi. Nomen *S. cuneatæ* specimini ex horto Soc. Hort. Lond. a semine culto adjungitur.

Potentilla albifolia, Don et Lehmann, est *Sibbaldia potentilloides*, Camb. in Jacquemont.

54. Rubus hypargyrus; aculeatus, subscandens, ramis tomentosis, foliis pinnatim 3-foliolatis; foliolis grossè et argutè duplicato serratis acutis basi cordatis suprà pubescentibus subtùs cano-sericeis, stipulis linearibus, pedunculis bifloris, sepalis longè acuminatis petalis roseis erectis longioribus.

Hab. Himala, in sylvis alt. ped. 8000–9000. Chúr, Lingarta, &c. Floret Junio.

Frutex subscandens; rami teretes, tomentosi. Aculei parvi, sparsi, breviter uncinati. Folia pinnatim trifoliolata; petiolo aculeato pubescenti; foliolis petiolulatis, cordato-ovatis, acutis acuminatisve, suprà pubescentibus, subtùs cano-sericeo-lanatis; stipulæ lineares acuminatæ. Pedunculi axillares biflori, stipulis breviores. Calyx utrinque densè sericeo-villosus, segmentis latè ovatis, longè acuminatis. Petala erecta, ovata, integra (rosea), calyce breviora. Ovaria sericea. Fructus flavus.

55. Rubus nutans (*Wall. Cat.* no. 738); caule repente inermi setoso, foliis pinnatim trifoliolatis, stipulis bracteisque ovatis scariosis, floribus solitariis longè pedunculatis nutantibus, calyce densè setoso; laciniis erectis cuspidatis petalis brevioribus.

Hab. Himala, ad alt. ped. 9000–10,000. Tungnath, Pandkesar, &c.

Suffrutex; rami procumbentes, repentes, inermes, densè setosi. Folia pinnatim trifoliolata,

longè petiolata, petiolis setosis, foliolis subtùs hirsutis suprà pilosis, argutè duplicato-serratis, rotundato-ovatis, apice obtusis sub-3-lobis, lateralibus basi semicordatis, medio cuneato. Stipulæ liberæ, ovatæ, apice denticulatæ, scariosæ, margine ciliatæ. Pedunculi solitarii, axillares et terminales, bibracteati (bracteis stipulis conformibus), uniflori, filiformes. Flores post anthesin nutantes. Calyx extùs densè setosus (setis ferrugineis subhamosis), intùs sericeus; laciniis erectis, latè ovatis, cuspidatis, exterioribus apice foliaceo-laciniatis. Petala alba, obovata, calyce longiora. Ovaria glabra. Fructus globosi, glabri, lætè cerasino-rubri, stylo persistente. Receptaculum pilosum.

Ab indigenis *Ishal* dictus; fructus sapore optimus. Nomen Wallichianum a Vest etiam usum et ideò forsàn mutandum; tum meo sensu "*barbatus*" appellandus.

Trib. POMACEÆ.

56. COTONEASTER ROSEA; foliis ovatis basi obtusis junioribus araneo-lanatis demùm glabratis nervis et margine tantùm pilosis, cymis paucifloris, calyce extùs lanato demùm margine excepto glabrato.

Hab. Himala, in sylvis. Chúr. Floret Junio.

Arbor mediocris. Rami teretes, purpurei, juniores lanato-sericei, demùm cuticulâ membranaceâ squamosâ decorticatâ glabri. Folia petiolata, ovata, basi rotundato-obtusa, integra, apice acuta, mucronata; juniora utrinque araneo-lanata, demùm glabrata, in nervis et margine tantùm pilosa, subtùs glauca; stipulæ obliquè lanceolatæ, acutæ, scariosæ, caducissimæ. Cymæ axillares terminalesque, pauciforæ; pedunculis sericeo-tomentosis demùm glabris; bracteis lineari-lanceolatis, tomentosis, caducis. Calyx lanatus, demùm margine excepto glabratus; laciniis obtusis, intùs glabris. Petala rotundata, margine crispata, rosea. Stamina glabra, filamentis basi dilatatis. Ovarium densè lanatum. Styli 2 glabri.

Affinis *C. laxifloræ*.

Ord. COMLRETACEÆ.

57. TERMINALIA (*Myrobalanus*) ATTENUATA; foliis ad apicem ramulorum confertis petiolatis obovatis obtusis basi attenuatis glabris, floribus masculis sessilibus.

Hab. Himala, ad alt. ped. 3000–4000. Jaggatgarh. Floret Junio.

Arbor magna. Folia ad apicem ramulorum ferrugineo-tomentosorum spiraliter confertè disposita, obovata, basi attenuata, apice obtusa, utrinque glabra, minutè punctata; petiolis 2-glandulosis (junioribus) pubescentibus. Spicæ axillares, pendulæ, multifloræ, foliis breviores. Flores inferiores hermaphroditi, superiores masculi, omnes sessiles.

Calyx extùs tomentosus, limbo cyathiformi, intùs basi densè villoso, laciniis revolutis intùs subglabris. Stamina erecta, calycis laciniis longiora. Antheræ rotundæ. Stylus simplex, subulatus. Fructus ovatus.

Ord. Crassulaceæ.

58. Rhodiola imbricata; polygama, foliis imbricatis latè lanceolatis integris acutis, corymbo simplici, laciniis calycinis obtusis apice incrassatis petalis linearibus brevioribus, staminibus petalis longioribus.

Hab. Himala, ad alt. ped. 11,000–13,000. Liti.

Polygama, glaberrima. Rhizoma crassum, odoratum; caules numerosi, foliosi, erecti (pedales). Folia alterna, imbricatim approximata, sessilia, plana, vix carnosa, lanceolata, integra, acuta. Corymbus terminalis, multiflorus, subsimplex. Flores masculi: calycis glabri laciniæ 4 lineares, obtusæ, apice incrassato-subclavatæ, petalis dimidio breviores. Petala 4, linearia, lutescentia. Stamina 8 subæqualia, petalis longiora. Ovaria 4 abortiva. Glandulæ subrotundæ, integræ. Flores fertiles non vidi.

Differt à *R. asiaticâ* foliis crebrioribus latioribus; à *Sedo Himalensi* floribus polygamis tetrameris et foliis integris.

59. Sedum (*sect.* 2.) rubrum (*Royle Ill.* p. 222); caulibus foliosis, foliis oppositis latè ovatis sinuato-dentatis integrisve glaucis, corymbo terminali multiflore, calycis laciniis obtusis petalis acutis subtriplò brevioribus.

Hab. In rupibus, Himala, alt. ped. 9000–10,000. Chúr, Pekha, &c.

Caules numerosi, subadscendentes, foliosi; folia opposita, latè ovata, obtusa, vel sinuato-dentata, inferiora breviter petiolata, superiora sessilia amplexicaulia, vel omnia petiolata integra, carnosa, glauca. Corymbus terminalis, trichotomus. Pedicelli bracteæque ovatæ, obtusæ, glabræ, rubescentes. Calycis glabri rubri laciniæ petalis subtriplò breviores, acutiusculæ. Petala patentia, rubro-purpurascentia, integra, acuta. Stamina 10 subæqualia, petalis breviora, antheris reniformibus. Carpella erecta, breviter stylis apiculata. Glandulæ subrotundæ, integræ.

Affinis *S. Telephio, Gerardiano*, &c.

60. Sedum sinuatum (*Royle Ill. l. c.*); caule simplici erecto, foliis linearibus apice sinuatè 3-dentatis 3-fidisve, floribus axillaribus subcorymbosis, laciniis calycinis obtusis petalis acutis paullò brevioribus, glandulis truncatis integris.

Hab. Himala, in muscosis vel rupibus vel ramis arborum frequens, ad alt. ped. 6000–10,000. Floret Aug., Sept.

Annuum. Caulis erectus, glaberrimus, simplex; folia linearia, basi attenuata, apice sinuatè 3-dentata v. trifida lobis obtusis. Flores axillares terminalesque, corymbosæ, bracteis linearibus. Calycis glabri laciniæ lineares, obtusæ, petalis paullò breviores. Petala lanceolata, acuta, patentia, alba. Glandulæ truncatæ, integræ. Stamina alterna paullò breviora, antheræ fuscæ. Carpella glabra, in fructu erecta, sepala elongata subæquantia.

61. SEDUM (*sect.* 3) ADENOTRICHUM (*Wall. Cat.* no. 7231); foliis obovatis crassis, scapis erectis paniculatim multifloris, pedunculis calyce petalisque extùs glanduloso-pubescentibus, glandulis emarginatis.

Hab. Himala, in rupibus madidis, alt. ped. 3000–7000.

Radix repens. Caules erecti, basi foliosi, glabri, suprà paucifoliati, glanduloso-pubescentes. Folia crassa, obovata, obtusa, basi cuneata. Paniculæ subdichotomæ, pilis glandulosis pubescentes, aphyllæ. Calycis extùs glandulosi intùs glabri laciniæ acutiusculæ, petalis triente breviores. Petala lanceolata, acuta, apice mucronulata, carnea, nervo medio glanduloso. Stamina 10, petalis breviora, subæqualia. Glandulæ oblongæ, emarginatæ. Carpella 5, stylo persistente apiculata, in fructu erecta.

Affinis *S. villoso.*

62. SEDUM ROSULATUM; repens, foliis rosulatis cuneato-spathulatis obovatisve, scapis erectis subnudis pauciflòris, pedicellis calyceque glanduloso-puberulis, petalis emarginatis mucronatis calyce longioribus.

Hab. Himala, in rupibus umbrosis, alt. ped. 7000–9000. Floret Maio. Tang, Sirkanda.

Caulis stolonifer repens; folia rosulata, cuneato-spathulata vel obovata, crassa, integerrima, glabra. Scapi paucifoliati, 2–3-flori. Flores longiusculè pedicellati, majusculi; pedicelli calycesque breviter glanduloso-puberuli. Calycis laciniæ obtusæ, petalis dimidio breviores. Petala obliquè emarginata, mucronulata, alba. Stamina alterna breviora. Glandulæ ? Carpella stylis longis apiculata.

63. SEDUM MUCRONATUM; caulibus foliosis, foliis linearibus, cymis pauciflòris, laciniis calycinis obtusis petalis acutis lanceolatis brevioribus, staminibus alternis brevioribus; antheris mucronatis, glandulis emarginatis.

Hab. Himala, in rupibus apricis, alt. ped. 8000–10,000. Lingarta, Sirkanda, &c. Floret Maio—Septembri.

Rhizoma crassum (odorum). Caules numerosi, teretes, erecti, prostrati v. penduli. Folia linearia, subelliptica, subcarnosa, obtusa, integra vèl apice plus minus denticulata, pa-

tentia. Cymæ 3–7-floræ, terminales. Calycis glabri laciniæ ovatæ, obtusiusculæ, petalis plùs duplò breviores. Petala lanceolata, acuta, patentia, alba. Stamina inæqualia, epipetala longiora, omnia petalis breviora; antheræ rotundatæ, rubræ, mucronatæ. Glandulæ oblongæ, emarginatæ, majusculæ. Carpella erecta, in stylos longos attenuata, rubescentia.

64. SEDUM PAUCIFLORUM; caulibus foliosis, foliis linearibus, cymis paucifloris, laciniis calycinis petalis oblongis subobtusis duplò brevioribus, glandulis rotundatis integris.

Hab. Himala, in rupibus apricis, alt. ped. 7000–8000. Kranda, &c. Floret Maio—Sept.

Rhizoma crassum; caules numerosi, teretes, foliosi, prostrati vel penduli. Folia glaberrima, linearia, obtusa, conferta, patentia, integra vel apice denticulata. Cymæ terminales 2–8-floræ. Flores majusculi, patentes. Calycis laciniæ latiusculæ, obtusæ, petalis duplò breviores. Petala oblonga v. sublanceolata, obtusiuscula, alba. Stamina 10, 5 paullò longiora petalis opposita. Antheræ rotundæ, emucronatæ, purpureæ. Carpella in stylum brevem subiter desinentia, in fructu erecta.

Hæc species et præcedens foliis et habitu omninò *S. linearifolio* (Royle Ill. p. 222, et t. 48. f. 1.) similes sunt; at floribus satis distinguendæ, cymis 2–7-floris, rarissimè si unquam unifloris petalisque hujus obtusis, istius acutis nec acuminatis.

S. mucronatum ab omnibus (?) congeneribus antheris mucronatis distinctissimum.

65. SEMPERVIVUM MUCRONATUM; foliis radicalibus rosulatis lanceolatis glabris mucronatis, scapis foliosis paucifloris, calycis laciniis petalisque glanduloso-pilosis mucronatis, glandulis obliquè truncatis.

Hab. Himala, ad alt. ped. 10,000–12,000. Pharkia prope Niti.

Polygamum. Folia radicalia conferta, rosulata, lanceolata, mucronata, glabra; caulina linearia, mucronata, pilosiuscula, adpressa. Scapi breves (2–6 unciales) foliosi; cymâ pauciflorâ, terminali. Calycis laciniæ lineares, acutæ, glanduloso-pilosæ, petalis triente breviores. Petala nervo medio crasso colorato, alba, puberula, acuta. Stamina alterna breviora; antheris ovatis. Glandulæ parvæ, carnosæ, obliquè truncatæ, integræ.

Omnia mea exemplaria sterilia sunt, ovariis sex abortivis.

Affinis *S. acuminato* in Jacquem. Voyage aux Indes (quod est *Sedum Moorcroftianum*, Wall. Cat. 7228); differt pubescentiâ calycis petalorumque scapisque foliaceis.

66. SEMPERVIVUM ALBUM; foliis radicalibus rosulatis obcuneatis carnosis, surculis pilosis, scapis unifloris paucifoliatis, foliis caulinis ovatis omnibus

ciliatis, calycis pubescentis laciniis petalis duplò brevioribus, petalis ovatis ciliatis albis.

Hab. Himala, in rupibus, alt. ped. 7000–8000. Kranda. Floret Septembri.

Surculi nudi, pilosiusculi, teretes, apice rosulati. Folia radicalia rosulata, obcuneata, carnosa, pilosiuscula, ciliata, caulina ovata. Scapi breves, erecti, paucifoliati, uniflori. Calycis laciniæ 8, angustè ellipticæ, pilosæ, ciliatæ, petalis multò breviores. Petala 8 magna, ovata, patentia, ciliata, alba, obtusa, basi brevi spatio connexa. Stamina 16 subæqualia, in petalis inserta; antheris rotundis rubris. Glandulæ carnosæ, stipitatæ, apice obliquè truncatæ, denticulatæ. Carpella 8, pilosiuscula, erecta.

Affinis *S. sedoides*, Jacquem. p. 74; differt calyce breviore, &c.

67. TILLÆA PENTANDRA (Royle, *l. c.*); ramis erectis foliosis, foliis subperfoliatis laciniisque calycinis subulatis striatis, petalis lanceolatis calyce brevioribus, carpellis ovatis acutis dispermis.

Hab. Himala, ad alt. ped. 4000–6000. Masúri, &c., in rupibus murisve aridis.

Caules repentes; rami numerosi, erecti, confertè foliosi; folia opposita, subperfoliata, subcarnosa, subulata, acuta, mucronata; ramuli floriferi axillares; flores axillares, solitarii, sessiles, vel breviter pedunculati. Sepala 5 subulata, acuminata, lacunoso-striata. Petala 5 angustè lanceolata, acuta, sepalis breviora, rubra. Stamina 5, ovariis breviora; antheris luteis subrotundis acutiusculis. Glandulæ 0? Pistilla 5, ovariis erectis, stylis brevibus, petalis breviora. Carpella minuta, 2-sperma; seminibus ovatis nitidis.

Species notabilis; facie et charactere carpologico omninò *Tillææ*, sed numero partium floralium et statione aridâ diversa. Si quidem *Crassulæ* referatur, nomen mutandum erit in *C. tillæoideam.*

Ord. SAXIFRAGEÆ.

68. SAXIFRAGA (*Arabidea*) MICRANTHA; hirsutiuscula, scapo filiformi paucifoliato paniculatim paucifloro, foliis radicalibus longè petiolatis caulinisque subsessilibus ovatis crenato-dentatis basi truncatis, capsulis venosis rugoso-punctatis.

Hab. Himala, ad alt. ped. 9000–10,000. Chúr.

Erecta, pilis sparsis hirsutiuscula, 6–10 uncialis. Folia radicalia, longè petiolata, rotundato-ovata, basi truncata, obtusa, crenato-dentata; caulina subsessilia; demùm floralia lanceolata. Scapus paucifoliatus; pedunculis axillaribus bifloris paniculam laxam formantibus. Pedicelli glanduloso-pilosi. Calycis gamosepali segmenta revoluta, intùs extùsque glabra. Petala parva, alba. Filamenta filiformia, petalis breviora. Styli breves, divaricati. Capsulæ venosæ, rugoso-punctatæ. Semina ovata, striata.

Saxifraga (*Hirculus*) *flagellaris.*

Hab. Himala, ad alt. ped. 16,000–18,000. Rathakona, prope portum Mána.

Differt ab exemplaribus in herbario Benthamiano ex Insulâ Melville et Greenland, caule brevissimo vix ullo, et foliis sepalisque angustioribus oblongis vix ovatis. Folia trinervia, nervis exterioribus dichotomis, ideò pseudo-quinque-nervia, anastomosantibus marginantibus.

Ord. UMBELLIFERÆ.

Trib. AMMINEÆ.

Gen. ACRONEMA, *Falconer MSS.*

CHAR. GEN. *Calycis* margo obsoletus. *Petala* lanceolata; in apiculum filiformem rectum acuminata. *Stylopodium* bifidum dilatatum; styli divergentes, apice deflexi. *Fructus* subovatus a latere compressus, subdidymus; *mericarpia* basi gibba apice angustata, jugis 5 æqualibus tenuiter filiformibus, omninò evittata; *carpophorum* liberum, integrum, apice bidentatum. *Semen* teres, convexum, anticè planiusculum.

69. ACRONEMA TENERUM; pusillum, glabrum, radice tuberosâ, foliis biternatis; foliolis basi cuneatis trilobatis: laciniis spathulatis mucronatis, umbellis 4–8-radiatis ex-involucratis, umbellulis 3–6-floris, involucelli foliolis 3–4 subulatis parvulis, petalis staminibusque eis brevioribus et stylis longioribus fuscis.

Hab. Himala, ad alt. ped. 6000–7000, supra arbores inter muscos subepiphyta, 2–4 pollicaris. Jul.—Sept.

Sison tener, Wall. Cat.

Heliosciadium? tenerum, DeC. Prodr. iv. p. 105.

Genus inter *Ammineas* evittatum, distinctissimum, et habitu notabile. Petalorum apiculus longus, subflagelliformis, ne minimè inflexus.

Gen. PETROSCIADIUM.

CHAR. GEN. *Calycis* limbus obsoletus. *Petala* ovata, integra, lacinulâ inflexâ. *Fructus* a latere compressus, oblongus, stylopodio pulvinato, stylisque divergentibus reflexis coronatus; *mericarpia* 5-juga, jugis filiformibus æqualibus, valleculis 1-vittatis, commissurâ bivittatâ; *carpophorum* bipartitum, adnatum. *Semen* planum, oblongum, basi angustatum.

70. PETROSCIADIUM CÆSPITOSUM; caulibus numerosis basi reliquiis petiolorum marcidis squamâtis cæspitosis, foliis omnibus subradicalibus pinnatipar-

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titis pube cinereâ tomentosis, foliolis 1–3-jugis subrotundis 3-lobis; segmento medio 3-dentato lateralibus integris, scapis tenuibus puberulis (3–5-uncialibus), involucri et involucelli foliolis subulatis pubescentibus, umbellis 3–4-radiatis, umbellulis 6–10-floris, pedicellis calyceque cinereo-pubescentibus, petalis extùs pubescentibus, staminibus petalis longioribus, fructu pubescenti.

Hab. Himala, ad alt. ped. 10,000–11,000, in rupibus (gneiss), infra Niti.

Herba cinerea, palmaris, facie *Pimpinellæ* sectionem *Tragium* æmulans; valleculis uni- nec trivittatis diversa, necnon petalis integris et carpophoro adnato. A *Petroselino* formâ fructûs omninò aliena est; igitur invitissimus novum genus formavi.

71. REUTERA ACUMINATA; erecta, glabra, foliis bi- triternatis; foliolis lanceolatis acuminatis pinnatifidis v. acutè inciso-dentatis, involucri et involucelli foliolis subulatis reflexis.

Hab. Himala, ad alt. ped. 6000–7000, in sylvis umbrosis. Masúri, Chepal, &c.

Erecta, ramosissima, glabra, 2–5 pedalis. Folia bi- triternata, foliolis lanceolatis, acuminatis, pinnatifidis v. inciso-dentatis, dentibus acutis mucronulatis; pinnis primariis supra vaginas sessilibus; ad nervos minutè puberula. Umbellæ oppositifoliæ terminalesque, multiradiatæ, pedunculis gracilibus. Involucri involucellique foliola subulata, margine tenui scariosa, integra v. subpinnatifida, reflexa. Umbellulæ 8–12-floræ, floribus interioribus interdùm sterilibus, pedicellis gracilibus in fructu nutantibus. Calycis margo obsoletus. Petala ovata, integra, apiculo brevi involuto, caducissima, luteo-virescentia. Fructus (junior compressus) maturus didymus, stylopodio conico rugoso stylisque reflexis coronatus; mericarpia 5-juga, lævia, jugis filiformibus, demùm subobsoletis, valleculis multivittatis.

72. BUPLEURUM RUPESTRE; annuum? multicaule, foliis linearibus basi breviter membranaceo-vaginantibus marginatis revolutis acuminatissimis, umbellis terminalibus inæqualiter 2–4-radiatis, involucro diphyllo; foliolis lanceolatis acuminatis subperfoliatis, umbellulis plurifloris, involucelli foliolis 7–8 basi connexis latè lanceolatis obovatisve acuminatis flores superantibus, petalis ovatis apice involutis, fructu latere compresso disco magno nigrescente stylisque brevibus rectis coronato, mericarpii jugis 5 acutè costatis subalatis, valleculis omnibus et commissurâ bivittatâ.

Hab. Himala, ad alt. ped. 11,000–12,000, in rupibus ad cacumen montis Chúr.

Affinis *B. tenui* et *virgato*; involucelli foliolis pluribus fructuque subalato distincta.

Trib. SESELINEÆ.

73. ŒNANTHE CORTICATA; caulibus decumbentibus foliosis, foliis pinnatisectis 1–2-jugis; foliolis latè ovatis inciso-serratis, involucri et involucelli foliolis linearibus reflexis, mericarpii jugis marginalibus corticato-incrassatis.

Hab. In Indiâ Boreali-Occidentali, rivulis stagnisque. Prov. Sirhind, Radaur.

Glabra, decumbens; caulis ramosa, fistulosa, foliosa. Folia pinnatisecta, inferiora petiolata, bijuga, superiora subsessilia, ternatisecta, foliolis latè ovatis, inciso-serratis; vaginâ brevi. Umbellæ oppositifoliæ terminalesque, multiradiatæ. Umbellulæ plurifloræ; involucri et involucelli foliola linearia, reflexa. Calycis laciniæ acutæ. Petala ovata, integra, apiculo inflexo, alba, lineâ dorsali fuscâ. Stylopodium breve, conicum, calycis laciniis auctis brevius. Fructus subglobosus, calyce stylisque rectis coronatus. Mericarpia 5-juga, jugis 3 dorsalibus incrassatis, marginalibus majoribus corticatis; valleculis 1-vittatis, commissurâ bivittatâ; carpophorum indistinctum. Semen dorso convexum, subtrigonum.

Affinis *Dasylomati latifolio*, et fortè congener. Differt autem (cum *D. latifolio*) a diagnose genericâ, calycis laciniis longis nec margine obsoleto, stylisque longiusculis nec brevibus. Semen vero ut in *Dasylomate* subtrigonum.

Trib. ANGELICEÆ.

74. ANGELICA GLAUCA; glabra, foliis triternatis; foliolis lanceolatis inciso serratis subtùs glaucis, umbellis pluriradiatis subæqualibus, involucri involucellique foliolis subulatis.

Hab. Himala, ad alt. ped. 8000–10,000. Kamalori, Hattu, &c.

Elata, glabra (6–12 pedalis); caulis fistulosa. Folia triternata, foliolis lanceolatis, inciso-serratis, mucronatis; lateralibus quandoque lobatis; subtùs glaucis, suprà olivaceo-viridibus. Umbellæ terminales et oppositifoliæ, longè pedunculatæ æqualiter pluriradiatæ; involucri involucellique foliolis subulatis, marcidis. Calycis margo obsoletus. Petala elliptica, extùs puberula, elliptica, apice involuta, nec apiculata; stamina petalis duplò longiora. Stylopodium in flore magno pulvinatum. Fructus dorso compressissimus; stylopodio non aucto brevi stylisque longis crassiusculis reflexis coronatus. Mericarpia jugis 5, dorsalibus 3 filiformibus, lateralibus amplis aliformibus; valleculis univittatis; commissurâ 2–4-vittatâ planâ. Semen anticè leviter concavum, dorso sub vittis exsulcatum, vix semiteres.

Indigenis *Chura* dicta, aromatica. An verè Angelica? semen magis compressum et anticè leviter concavum.

Gen. OREOCOME.

CHAR. GEN. *Calycis* limbus 5-fidus; laciniis subulatis. *Petala* ovata, apiculo inflexo plùs minùs emarginato. *Fructus* a dorso compressus, stylopodio stylisque reflexis coronatus; *mericarpia* 5-juga, jugis alatis, marginantibus amplis, valleculis 1-vittatis, marginalibus quandoque bivittatis; commissurâ 2–4-vittatâ. *Semen* anticè planum vel subconcavum, dorso sub valleculis exsulcatum; *carpophorum* liberum bipartitum.

75. OREOCOME ELATA; foliis 4–5-pinnatisectis, caulinis superioribus 3-pinnatisectis; pinnis primariis ad vaginæ apicem sessilibus: laciniis inciso-dentatis acutis, involucelli foliolis linearibus, valleculis dorsalibus 1-marginalibus 1–2-vittatis: commissurâ 4-vittatâ, semine anticè plano.

Hab. Himala, in sylvis, alt. ped. 8000–10,000. Mahaseo, Chúr.

Perennis, elata, 4–10 pedalis, tenuiter puberula. Caulis fistulosus, striatus. Folia inferiora longissimè petiolata, 4–5-pinnatisecta; caulina tripinnatisecta; in his pinnis primariis ad apicem vaginæ sessilibus; omnium laciniis inciso-dentatis acutis; in nervis puberula, ceterùm glabra. Umbellæ oppositifoliæ terminalesque, longè pedunculatæ, multiradiatæ. Involucri foliola linearia, plùs minùs caduca. Involucella lineari-subulata, nervo medio et margine ciliata, persistentia, integra. Calycis glabriusculi laciniæ subulatæ. Petala apiculo inflexo subobcordata; filamenta eis paullò longiora. Ovarium a latere compressum. Styli breves, in stylopodio pulvinato deflexi. Fructus ut suprà; valleculis dorsalibus 1-, marginalibus 1–2-vittatis; commissurâ 4-vittatâ. Semen anticè planum, dorso sub vittis exsulcatum.

76. OREOCOME FILICIFOLIA; foliis inferioribus 4–5-pinnatisectis superioribus tripinnatisectis; pinnis omnibus petiolatis: segmentis pinnatifidis lobis angustis lanceolatis acutis mucronatis, involucelli foliolis biformibus lanceolatis pinnatifidisque, valleculis dorsalibus uni-marginalibus uni- bivittatis: commissurâ 4-vittatâ, semine anticè subconcavo.

Hab. Himala, in sylvis, alt. ped. 9000–10,000. Kamalori, Hattu, &c.

Erecta, puberula, 2–8 pedalis, caule fistuloso striato. Folia inferiora longè petiolata, 4–5-pinnatisecta; caulina superiora 3-pinnatisecta, pinnis primariis paullò supra vaginam ortis, petiolatis; foliolis pinnatifidis segmentis integris laciniatisve angustè lanceolatis, acutis, mucronatis; secus nervos puberula, ceterùm glabra. Umbellæ oppositifoliæ terminalesque, longè pedunculatæ, multiradiatæ; involucri foliolis linearibus, integris vel apice pinnatifidis; involucelli foliolis biformibus, aliis herbaceis linearibus pinnatifidis laciniis subulatis, aliis lanceolatis margine scariosis apice integro acuto sive pinnatifido,

persistentibus. Calycis laciniæ subulatæ, petalis triente breviores. Petala obovata, intùs carinata, extùs nervo subferrugineo notata, apiculo inflexo plùs minùs emarginata. Filamenta petalis subduplò longiora. Styli breves, in stylopodio mediocriter pulvinato reflexi. Fructus ut suprà; valleculis latè univittatis, marginalibus quandoque bivittatis, commissurâ 4-vittatâ planâ. Semen anticè leviter excavatum, dorso altè sub vittis exsulcatum.

Ambæ species aromaticæ, odoratæ, ab indigenis *Khes* (id est *crinis*, unde nomen, ὄρεος κόμη, montis crinis) dictæ; valdè affinis *Selino Candollii* (*Peucedano Wallichiano*, DeC. Prodr. iv. p. 181. *Selino tenuifolio*, Wall.) et *Pleurospermo cicutario*, Royle Ill., quæ etiam hùc revocanda. A *Selino* differunt calycis laciniis subulatis nec margine obsoleto; commissurâ 4- nec 2-vittatâ.

O. elatum ab *O. Candolliano* differt foliorum segmentis acutis nec acuminatis, pinnisque primariis in foliis superioribus sessilibus nec petiolatis; *O. filicifolia* foliis multò tenuiùs sectis (ferè ut in foliis *Athyrii filicis fœminæ*), et involucello biformi.

Trib. Peucedaneæ.

77. Cortia vaginata; recta, glabra, foliis bipinnatis; foliolis lanceolatis argutè duplicato-serratis, involucelli foliolis linearibus, calycis laciniis subulatis, stylis erectis demùm divaricatis, valleculis dorsalibus 1- marginalibus 2-: commissurâ 6-vittatis.

Hab. Himala, ad alt. ped. 9000–11,000, in apricis graminosis. Chúr, &c., Kamalori, Hattu, Garhwál.

Perennis, erecta; caulis fistulosus, striatus, glaber, 2–3 pedalis; folia secus nervos et margine puberula, ceterùm glabra; caulina vaginâ longâ petiolata, et supra pinnas infimas membranaceo-stipulata. Umbellæ multiradiatæ, oppositifoliæ terminalesque, pubescentes; involucri foliola caduca et involucelli persistentia lineari-lanceolata, plùs minùs pinnatifida, pubescentia. Umbellulæ plurifloræ; pedicellis involucello brevioribus; floribus subradiatis. Calycis laciniæ longæ, subulatæ, glabræ. Petala exteriora subcordata, interiora integra, apiculo inflexo subemarginata. Stamina petalis longiora; antheris cærulescentibus. Styli perlongi, erecti, demùm divaricati nec reflexi. Fructus dorso compressus (junior a latere): mericarpia 5-juga, jugis 3 breviùs, 2 marginalibus longiùs alatis, altero mericarpio arctè adpressis; valleculis dorsalibus 1-, marginalibus 2-, commissurâ 6-vittatis. Semen anticè subplanum, dorso leviter sulcatum.

A *Cortiæ* charactere differt formâ petalorum.

78. Cortia elata; erecta, foliis bipinnatisectis; foliolis ovato-lanceolatis pin-

natifidis: lobis inciso-serratis marginatis ciliolatis mucronatis, involucelli foliolis subulatis, calycis laciniis brevibus, valleculis dorsalibus 2–3-marginalibus bivittatis commissurâ 6-vittatâ.

Hab. Himala, in apricis graminosis, alt. ped. 7000–9000. Mahaseo, &c.

Erecta, glabriuscula, bi- tripedalis. Folia bipinnatisecta; foliolis ovato-lanceolatis, pinnatifidis; lobis inciso-serratis, serraturis acutis, mucronatis, marginatis, ciliolatis. Umbellæ longè pedunculatæ, oppositifoliæ terminalesque, polygamæ, multiradiatæ. Umbellulæ multifloræ, involucro nullo v. caduco, involucelli foliolis subulatis. Flores ♂: calycis limbus brevissimè acutè 5-dentatus; petala lineari-lanceolata, apiculo acuminato inflexo, adnato. Flores ♀: fructus dorso compressus, stylis reflexis brevibus coronatus; mericarpia 5-juga, dorsalibus 3 minùs, marginalibus ampliùs alatis, altero mericarpio adpressis; valleculis dorsalibus bi- trivittatis, lateralibus 3-vittatis, commissurâ 6-vittatâ. Semen compressum, anticè planum, dorso sub valleculis leviter sulcatum.

Valdè affinis *Levistico arguto*, Lindl. in Royle Ill., quod congener videtur. Fructus ferè *Selini* facie, alis adpressis nec separatis differt et vittis plurimis; an in genere *Cortiâ* admittendum dentibus calycinis brevibus stylisque reflexis alienum?

Hæ duæ species satis distinctæ a *Cortiâ Lindleyi* habitu et formâ foliorum, inter se calycis et petalorum formâ stylisque differunt; forsàn potiùs ad *Conioselinum* intra *Seselineas* referendæ *.

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* I have no doubt in assigning a place to my new genus *Oreocome* in the *Angeliceæ*, as the marginal wings of the mericarps are distinctly divergent, although one of the species belonging to it has been referred to *Peucedanum* by DeCandolle; but with regard to the place of those plants which I have referred to *Cortia* I have some doubt, the wings being not so closely adpressed as in the typical *Peucedaneæ*. The fruit, however, exactly resembles that of *C. Lindleyi*, though Dr. Lindley has referred (in Royle's Illustrations) what appears to me, from a cursory examination, to be a congener with these, to *Levisticum*. In fact, the difference between *Peucedaneæ* and *Angeliceæ* is entirely one of degree; the character of the "raphe marginal" or "central," as given by DeCandolle, being contrary in the first place to theory, and secondly, to fact. I have specially examined, with Mr. Bentham, fruits of indubitable *Heraclea* and *Peucedana*, and found the raphe central; again, it is difficult to say what amount of curvature in the albumen is sufficient to constitute a campylosperm seed. In *Oreocome filicifolia*, *Angelica glauca* and *Cortia vaginata*, herein described, the seed is slightly hollowed out in front, but not I think sufficiently so to remove them from the genera to which I have referred them, though I suppose a similar excavation in the seed of *O. cicutaria* is the reason why Dr. Lindley referred it to *Pleurospermum*. I likewise suspect that *Ligusticum* (*Laserpitium*, Wall. List. no. 584) *coniifolium* is also referable to *Oreocome*; but as there is no ripe fruit in the specimens in the Herbarium of the Linnean Society, I cannot be sure on that point. I observe that a similar remark on the unsatisfactory nature of the subordinal and generic characters of this family has been made by M. Boissier.

79. HERACLEUM (*Sphondylium*) HIRSUTUM; foliis pinnatis bipinnatisve; foliolis semicordatis 3-sectis trilobisve: lobis ovatis acutis inæqualiter inciso-serratis longè petiolatis breviter vaginatis.

Hab. Himala, ad alt. ped. 6000–7000, in sylvis umbrosis. Simla, &c.

Herba perennis, debilis, hirsuta, 1–3 pedalis, ramosa. Folia pinnata v. bipinnata, longè petiolata; vaginâ brevi, viridi; foliolis semicordatis, trisectis trilobisve, lobis ovatis, acutis, inæqualiter inciso-serratis, serraturis acutis mucronulatis. Umbellæ longè pedunculatæ, terminales; involucri caduci et involucelli foliolis linearibus, acutis, hirsutis. Flores albi, radiati; calycis laciniæ acutæ; petala emarginata v. exteriora subbifida, apiculo a fissurâ orto inflexo. Stamina petalis longiora. Styli basi recti, stylopodio brevi conico sensim accreti, apice reflexi. Fructus compressus, alâ latâ basi præsertim ampliatâ circumdatus, obovatus; mericarpiis jugis 3 dorsalibus tenuissimis, 2 marginalibus in alam expansis; valleculis 1-vittatis, commissurâ bivittatâ.

Trib. CAUCALINEÆ.

Gen. PSAMMOGETON (ψάμμος, *arena*; γείτων, *vicinus*).

CHAR. GEN. *Calycis* limbus obsoletus. *Petala* obcordata, lacinulâ ex fissurâ orta inflexâ. *Styli* basi conico subrecti. *Fructus* teres; *mericarpia* jugis 5 primariis filiformibus, setas glochidiatas gerentibus; secundariis simplici serie setosis; valleculis sub jugis secundariis 1-vittatis; commissurâ bivittatâ planâ. *Semen* albumine leviter excavato. *Carpophorum* bipartitum, liberum.

Genus, si verè *Caucalineis* adferendum, *Turgeniæ* et *Torili* affine; calycis limbo obsoleto, jugisque secundariis simpliciter setoso-aculeatis distinctum. An jugis secundariis veris nullis ad Smyrnieas revocandum? involucri foliis membranaceis *Hymenolænæ* affine.

80. PSAMMOGETON BITERNATUM; annuum, pubescens, ramis stellatim decumbentibus, foliis biternatisectis; lobis basi cuneatis 3-dentatis dentibus acutis mucronatis suprà glabris subtùs pilis patentibus pubescentibus, umbellis oppositifoliis longè pedunculatis 6–10-radiatis; pedicellis subglabris, involucro 3-phyllo; foliolis linearibus acutis membranaceo-marginatis apicem versus breviter ciliatis, involucelli foliolis lanceolatis acuminatis ciliatis membranaceis nervo medio herbaceo, petalis exterioribus majoribus bifidis junioribus purpurascentibus, staminibus filiformibus eis longioribus.

Hab. In arenosis Ind. Prov. Bor. Occ. Ambala, Balawali. Januario—Maio.

Subord. CŒLOSPERMEÆ.

Gen. SCAPHESPERMUM.

CHAR. GEN. *Calycis* margo 5-dentatus; laciniis subulatis, caducis. *Petala* obovata, integra, apiculo inflexo. *Stylopodium* tumidum, depressum. *Styli* longi, reflexi. *Fructus* subglobosus; *mericarpia* 5-juga, jugis filiformibus æqualibus, valleculis 1-vittatis, commissurâ 2–4-vittatâ; *carpophorum* liberum, bipartitum. *Semen* anticè longitudinaliter concavum; dorso leviter sub valleculis sulcatum.

81. SCAPHESPERMUM TRILOBUM.

Hab. Himala, in glareosis, alt. ped. 10,000–11,000; prope Niti.

Herba 1–2 pedalis, perennis; caules breves, erecti, ramosi, ramis puberulis. Folia parva, triloba v. ternatisecta, utrinque pubescentia; foliolis basi cordatis, subrotundis, trilobis, grossè dentatis, dentibus breviter mucronulatis. Pedunculi longissimi, oppositifolii et terminales, puberuli; umbellâ 6–7-radiatâ. Involucri foliola subulata, hirsuta, caduca; involucelli conformia, persistentia. Umbellulæ multifloræ, flore uno sessili. Calycis hirsuti laciniæ subulatæ, caducæ. Petala extùs villosa. Fructus hirsuto-pubescens. Commissura vittis 2 distinctissimis majoribus marginalibus, 2 centralibus tenuioribus interdùm evanidis.

Genus distinctum; facie *Pimpinellas* spectat, at characteribus omnibus carpologicis alienum.

Ord. LORANTHACEÆ.

82. LORANTHUS (*Symphyanthus*) ELATUS; tetramerus, junior totus ferrugineo-tomentosus demùm glaber, ramis teretibus lævibus, foliis petiolatis ovatis, racemis 2–3 axillaribus 7–10-floris laxis, floribus longiusculè pedicellatis, corollæ tubo curvo laciniis plus triplò longiore fissuris vix æqualibus.

Hab. Himala, in sylvis, ad pedum 9000 altitudinem.

Rami teretes, glabri, læves, juniores ferrugineo-tomentosi. Folia opposita, petiolata, venosa, ovata, basi subcordata vel attenuata, apice obtusa vel acuta; juniora ferrugineo-tomentosa, tomento pulverulento caduco glabrata. Racemi 2–3 axillares, 7–10-flori, laxi. Pedicelli divaricati, recti, longiusculi, glabrati, unibracteati. Bracteæ adpressæ, rotundæ, ovario triplò breviores, pulverulentæ. Calycis limbus brevissimus subnullus truncatus. Corolla extùs puberula, tetramera, longè tubulosa, incurva, vix regularis; fissurâ anticâ paulò longiore, posticâ breviore, tubo medio inflato, laciniis linearibus

reflexis plus triplò longiore (9 lineas longo) intùs glabro; lineis suturalibus glabris. Filamenta apice brevissimo spatio libera, glabra, lævia; antheræ terminales, erectæ, tantùm exsertæ. Stigma capitatum.

Nomen propter elevationem stationis. In Salicibus præcipue crescit.

83. LORANTHUS (*Scurrula, Pentameræ*) IMBRICATUS; glaber, ramis verrucosis, foliis subopppositis petiolatis obovatis, racemis fasciculatis axillaribus multifloris erectis, pedicellis erectis imbricatis, corollæ tubo incurvo laciniis reflexis plus duplò longiore, filamentis breviter liberis glabris, corollæ lineis suturalibus ad faucem tantùm squamosis.

Hab. In sylvis Dehra Dhun prope Kharak, in arboribus variis.

Glaberrimus, ramis teretibus verrucosis. Folia subopposita, petiolata, obovata, basi attenuata, coriacea. Racemi fasciculati, axillares, erecti, multiflori. Pedicelli subadpressi, imbricatim conferti, breves vix ovario longiores, unibracteati; bracteâ parvâ, rotundâ, ovario triplò breviore, adpressâ, glabrâ. Calycis glabri limbus liber, $\frac{1}{2}$ lineam longus, truncatus. Corolla irregularis, fissuris 2 anticis ad trientem longitudinis fissis, posticâ lateralibus paullò breviore; tubo extùs glabro incurvo laciniis reflexis plus duplò (nec triplò) longiore (9 lin. longo), intùs ad faucem tantùm lineis suturalibus squamoso-verrucosis. Filamenta breviter libera, exserta, glabra (antheris breviora); antheris terminalibus erectis. Stylus antheras superans, striatus. Stigma capitatum.

84. LORANTHUS LINEATUS; glaber, foliis subopppositis, racemis nutantibus paucifloris, corollæ tubo longo laciniis reflexis triplò longiore intùs usque ad medium lineis suturalibus squamato-verrucosis, filamentis breviter liberis glabris.

Hab. Himala, in vallibus, alt. ped. 2000–3000. Girri valle.

Glaber; rami rugosi, teretes; folia subopposita, oblonga, breviter petiolata, basi attenuata, coriacea, subavenia, 5–6 pollices longa, 2–3 lata. Racemi fasciculati, axillares, pauciflori, nutantes; pedicelli breves, recurvati, unibracteati; bractea adpressa, ovario quadruplò brevior, rotundata. Calycis limbus brevis, truncatus. Corolla irregularis, ad mediam fissa, incurva; tubo laciniis reflexis (5 lineas longis) triplò longiore (15 lin.) medio inflato, extùs glabro, intùs ad medium lineis suturalibus squamoso-verrucosis. Filamenta antherarum erectarum longitudine libera, glabra, lævia. Stigma subcapitatum.

Valdè affinis *L. bicolori* (*longifloro*, W. et A.) sed differt filamentis glabris nec setis retrorsis hispidulis, et corollâ breviore.

Ord. CAPRIFOLIACEÆ.

85. LONICERA (*Xylosteum, Cuphantha*) OXYPHYLLA; foliis lineari-lanceolatis acuminatis subglabris, ovariis basi connexis, corollis hinc gibbis, bracteis subulatis ovario duplò longioribus.

Hab. Himala, ad alt. ped. 9000–10,000. Chúr. Floret Junio.

Frutex vel arbor parva; ramuli teretes albidi. Folia brevè petiolata, lineari-lanceolata, acuminata, subglabra, pilis paucis minutè ad nervos marginesque subciliata. Stipulæ magnæ, ovatæ, obtusæ, scariosæ, caducæ. Pedunculi biflori, axillares, petiolis duplò longiores; bracteis subulatis, ovario duplò longioribus; bracteolis utrinque 2 oblongis obtusis ovario duplò brevioribus. Corolla pallidè rubra, tubo hinc valdè gibbo. Ovaria basi tantùm connexa. Calycis limbus truncatus, laciniis 5 brevissimis setiformibus. Baccas non vidi.

Species notabilis ut cum *L. heterophyllâ* Jacquemontii sola hujus sectionis adhuc in Himalâ reperta.

86. LONICERA (*Isica*) PARVIFOLIA; procumbens, foliis oppositis fasciculatisve obovatis brevissimè petiolatis glabris, pedunculis folio longioribus bifloris, bracteis 2 subulatis ovario longioribus, corollâ dorso gibbâ, ovariis glabris in unum connexis.

Hab. Himala, ad alt. ped. 11,000–12,000. Chúr, Badhrinath. Floret Junio.

Frutex glaber; rami procumbentes, cæspitosi; folia opposita vel in ramulis parvis fasciculata, obovata, brevissimè petiolata, glabra, squamis scariosis ciliatis suffulta. Pedunculi axillares, folio longiores, biflori, 4-bracteati. Bracteæ 2 inferiores ovario duplò longiores, subulatæ, apice ciliatæ, dorso corollæ oppositæ, 2 laterales adpressæ, ovario duplò breviores, rotundatæ, obtusæ. Calycum limbi breves inter se connati, ex 10- 9-dentati, dentibus obtusis integris. Corolla tubuloso-campanulata, basi dorso gibba, alba; limbo breviter subæqualiter 5-lobo, lobis rotundatis. Stamina 5 (vel abortu 2), subexserta; antheris lineari-oblongis, equitantibus. Stylus subexsertus; stigmate capitato. Ovarium glabrum, calycis dentibus coronatum. Fructus lætè rubens, edulis.

Affinis *L. microphyllæ* et *angustifoliæ*.

Ord. RUBIACEÆ. Trib. HEDYOTIDEÆ.

87. OPHIORHIZA NANA; hispidula, foliis radicalibus longè petiolatis caulinisque ovatis, floribus terminalibus solitariis cymosisve, stipulis linearibus, corollæ tubo calyce plus duplò longiore.

Hab. Himala; in rupibus calcareis madidis tempestate pluviosâ cum *Cyrtandraceis* crescit, ad alt. ped. 6000–8000. Hathipaon. Floret Junio.

Herba parva, uncialis, omninò hispidula. Radix tuberosa. Folia radicalia longè petiolata, rotundato-ovata, basi subcordata, caulina brevè petiolata, opposita, ovata, utrinque hispidula, subtùs glaucescentia, petiolis ciliatis. Stipula utrinque 1, foliacea, linearis, acuta, ciliata. Flos solitarius, vel cyma 3–5-flora terminalis. Calycis hispiduli limbus 5-fidus, ciliatus, lobis acutis. Corolla infundibuliformis, alba, extùs pilosiuscula; tubo calyce duplò longiore; limbo 5-dentato, plicato, lobis acutis. Stamina ad basin tubi affixa, filamentis brevibus filiformibus, antheris lateribus inter se subconnexis oblongis. Stylus basi urceolatus.

Affinis videtur *O. perpusillæ*, Blume.

Trib. Galieæ.

88. Galium (*Leiogalium*) acutum; glaberrimum, caulibus prostratis radicantibus ramosissimis 6-angularibus glabris, foliis senis lineari-lanceolatis acutissimis mucronatis, floribus axillaribus utrinque solitariis, pedunculis foliis brevioribus defloratis erectis, corollæ albæ lobis acutis, staminibus corollâ brevioribus, stylo bifido ramis divaricatis staminibus longiore, stigmatibus capitatis, fructu granulato-scabro.

Hab. Himala, ad alt. ped. 10,000–11,000. Badhrinath. Floret Octobri.

Affine *G. pumilo*, sed nervis foliorum minus prominentibus; a *G. saxatili* differt foliis lanceolatis nec ovatis, et inflorescentiâ.

89. Galium (*Trichogalium*) asperuloide; repens, glabriusculum, caulibus erectis glabris, foliis verticillatis (verticillis distantibus) octonis lineari-lanceolatis mucronatis serrulato-ciliatis, cymis axillaribus terminalibusque corymbosis, fructu hispido.

Hab. Himala, in sylvis, alt. ped. 8000–10,000.

Perenne, repens, glabriusculum. Caules numerosi, erecti, glabri, verticillis distantibus. Folia verticillata, octona, lineari-lanceolata, utrinque acuta, mucronata, lætè virentia, pilis sparsis adpressis utrinque hispidula, margine pilis albis serrulato-ciliata, (1–1½ poll. longa, 4–5 lineas lata). Cymæ axillares terminalesque, dichotomo-corymbosæ; bracteæ lineares, demùm setaceæ. Corollæ rotatæ laciniæ patentes, acutiusculæ, genitalibus longiores. Stamina 4. Styli duo a basi distincti, breves. Fructus hispidus.

Facies *Asperulæ odoratæ*

Ord. DIPSACEÆ.

90. MORINA BREVIFLORA; foliis linearibus sinuato-lobatis spinosis: floralibus ovatis acuminatis spinosissimis, involucro truncato spinoso, calycis lobis bifidis; segmentis acutis spinosis, corollæ tubo calyce plus duplò longiore, filamentis breviter liberis apice pilosiusculis.

Hab. Himala, ad alt. ped. 10,000–14,000. Pharkia, prope por.um Niti.

Folia radicalia linearia, sinuato-lobata, glabra (6–9 uncialia), lobis 1–3-dentatis, dentibus longè spinosis, sinubus serrulatis spinulosis. Scapus erectus (1–2 pedalis), sub-4-angularis, infrà glaber, suprà pubescens, purpurascens, verticillis (circum 5) superioribus floriferis subapproximatis. Folia caulina verticillata, sessilia, amplexicaulia, inter se connexa, radicalibus similia sed gradatim minora; floralia ovata, acuminata, spinosissima, basi molliter villosiuscula, apice glabra, viridia nec (ut in *M. longifoliâ*) rubra. Flores numerosi, axillares. Involucrum 1-florum, tubulosum, molliter tomentosum, 6–8-nerve, 6–16-denticulatum, dentibus spinosis; spinis 2 multò longioribus, calycis laciniis oppositis easque superantibus. Calyx ad apicem ovarii constrictus, villosus, cetera subglaber; limbus tubuloso-campanulatus, bipartitus, lobis bifidis, segmentis acutis spinosis. Corollæ tubus gracilis, calycis limbo plus duplò nec triplò longior, puberulus; limbus bilabiatus $\frac{2}{3}$, lobis obtusis. Staminum filamenta 2, dianthera, antheris obliquis, corollæ adnata, brevissimè libera vix exserta, apice minutè pilosa nec barbata, 2 sterilia in labio inferiore subsessilia. Semen solitarium rugosum. Flores odorati, odore *Loniceræ*.

Differt a *M. polyphyllâ* verticillis distantioribus, involucro truncato nec dentato; a *M. longifoliâ* foliis floralibus spinosis; a *M. Wallichianâ* et *M. Persicâ* staminibus vix nec longè exsertis, pilosis nec barbatis, et corollâ multo breviore; a *M. Coulterianâ* lobis calycinis spinosis.

Ord. COMPOSITÆ. Trib. VERNONIACEÆ.

91. VERNONIA (*Tephrodes*) RHOMBOIDEA; hirsuta, caulibus erectis ramosis, foliis petiolatis rhomboideis grossè mucronato-dentatis, involucri squamis acuminatis mucronatis, receptaculo fimbrillato.

Hab. Himala, ad alt. ped. 5000–6000, in graminosis. In valle fl. Mandagni, Garhwal Orientalis. Octobri.

Herbacea, erecta; caulis ramosus, ramis teretibus villoso-hirsutis. Folia petiolata, alterna vel subopposita, latè rhomboidea, grossè dentata, dentibus acutis mucronulatis, subtùs lanata, suprà hirsuta; basi longè in petiolum attenuata, petiolo non decurrente; floralia

linearia v. subulata. Corymbi axillares terminalesque, pedunculis hirsutis. Capitulum cylindricum, multiflorum, homogamum. Involucri squamæ extùs pubescentes, basi hirsutæ, intùs glabræ; exteriores breves, interiores gradatim longiores, lineares, acuminatæ, mucronatæ. Corollæ omnes pentameræ, tubulosæ, laciniis linearibus, revolutis, apice glandulosis, barbellatis. Stamina 5 antheræque glabræ. Styli rami longi, scabri. Achenium teres, villosum. Pappus duplex, serie exteriore brevi, interiore longiore; setis tenuibus scabris. Receptaculum alveolatum, breviter fimbrillatum.

92. VERNONIA OLIGOCEPHALA; herbacea, pilis adpressis puberula, caulibus brevibus 1–3-floris, foliis linearibus integris pauci-dentatisve margine revolutis, capitulis pedunculatis subsolitariis, involucri squamis lanceolatis acutis mucronatis apice laceris, pappo 1-seriali æquali.

Hab. In graminosis, sub Himala. Paota, Dehra Dhun. Floret Martio—Junio.

Herbacea, perennis; caules suberecti, 2–4-unciales, puberuli. Folia sessilia, linearia, margine revoluto integro vel dentibus paucis remotis glandulosis, utrinque pilis adpressis puberula. Capitula majuscula, terminalia, subsolitaria, pedunculis longis, striolatis, 1–2-foliatis, foliis subulatis. Involucrum imbricatum, ovoideum, multiflorum. Squamæ extùs pubescentes, intùs glabræ, ciliatæ, exteriores lanceolatæ acuminatæ, interiores latè lanceolatæ, acutæ mucronulatæ ad apicem margine submembranaceo-laceræ. Corollæ purpureæ, omnes ☿ tubulosæ, graciles, 5-fidæ, laciniis linearibus. Stamina 5; antheris ecaudatis, apice breviter appendiculatis. Styli rami cylindrici, revoluti, extùs puberulo-scabri. Achenium teres, pubescens. Pappus simplex, uniserialis, setis asperis æqualibus, albus.

Affinis *V. revolutæ*! differt squamarum formâ et staturâ, &c.

Trib. EUPATORIEÆ.

93. EUPATORIUM (§ *Cannabina*) DICLINE; hirsutum, foliis 3-sectis: lobis lanceolatis grossè dentatis, corymbis compositis multifloris, involucri squamis obtusis interioribus scariosis coloratis.

Hab. Himala, ad alt. ped. 6000–7000. Tapuban, in valle fl. Dhauli, Garhwal Orientalis. Octobri.

Erectum, hirsutum, 3–4 pedale. Caules teretes. Folia opposita, subsessilia, inferiora trisecta segmentis lanceolatis vel superiora lanceolata plùs minùs 3-lobata, grossè inciso-serrata, acuta, utrinque hispida. Corymbi decompositi, terminales, confertim multiflori. Pedunculi pubescentes. Capitula dioica v. polygama? 5–6-flora. Involucrum imbricatum, cylindricum; squamæ circiter 10, 5 exteriores breves pubescentes, 5 interiores longiores subæquales glabræ, omnes obtusiusculæ margine scarioso carneo, subdenticulatæ.

Flores fœminei omnes tubulosi, pappo breviores. Stamina 5 antheris sterilibus, ov. nulla. Styli rami 2 vel 3, longissimè divaricati, papillosi. Achenia nigra, subcompressa, pentagona, lævia, glandulosa. Pappus uniserialis; setis scabris, basi brevissimè connexis. Receptaculum stipitatum, alveolatum. Flores masculos, capitula plurima frustrà perquisitus, non inveni.

Affine *E. cannabino*, involucri squamis paucioribus, floribus diclinibus, necnon hirsutis, distinctum.

94. ADENOCAULON HIMALAICUM; foliis rotundatis subreniformibus repandis mucronato-dentatis, capitulis 12–20-floris, antheris obtusis.

Hab. Himala, in sylvis, alt. ped. 7000–9000, intra Nagkunda et Kotgurh; Padma Khal in Garhwal Occidentali.

Erectum, araneoso-lanuginosum. Caulis teres, striatus, parcè ramosus. Folia alterna, longè petiolata, rotundato-subreniformia, in petiolum decurrentia, repanda, mucronulato-denticulata, suprà glabra ad nervos tantum glanduloso-puberula, subtùs niveo-tomentosa, superiora minora. Ramuli axillares et terminales sub-3-cephali, bracteis setaceis. Pedunculi monocephali, longi, floriferi lanuginosi, post anthesin elongati pilis capitatis glanduloso-hispidi viscidi. Capitula solitaria, monœca. Flores exteriores fœminei, 6–12; interiores 16–24 masculi. Involucri squamæ 5, ovatæ, post anthesin reflexæ. Flores ♀ uniseriales, campanulati, 4-fidi, tubo brevi, laciniis patentibus obtusiusculis. Styli rami breves, lanceolati, plani. Achenia clavato-cylindrica, incurva, basi attenuata, glabra, apice pilis capitatis viscidis glanduloso-hispida, stellatim patentia. Pappus 0. Flores ♂ 3-seriales tubulosi, tubo brevi, limbo 4–5-fido, laciniis revolutis acutiusculis. Stamina 4–5; antheris utrinque muticis, obtusis, exsertis. Stylus sterilis, indivisus, apice capitatus, antheras superans. Receptaculum breviter conicum, vix punctatum.

Species aliæ hujus generis hucusque cognitæ ambæ Americanæ. Hæc primâ facie *A. bicolori* simillima, sed foliorum formâ, capitulis plurifloris, antherisque muticis nec acutè-appendiculatis, stylisque brevioribus satis distinguenda.

Trib. ASTEROIDEÆ, § Astereæ.

95. ASTER FERRUGINEUS; suffrutex, ramis ferrugineo-pubescentibus, foliis omnibus lineari-lanceolatis utrinque acutis subtùs glaucis araneosis suprà puberulis, corymbis multifloris, capitulis longè pedicellatis, squamis involucri carinatis margine scariosis ciliatis, floribus radii circiter 12, pappo uniseriali ferrugineo.

Hab. Himala, ad alt. ped. 10,000–12,000, prope Badhrinath. Octobri.

Suffrutex 3–4 pedalis, ramosissima; rami teretes, juniores ferrugineo-pubescentes. Folia omnia lineari-lanceolata, utrinque acuta, in petiolum brevem attenuata, margine subrevoluto integra vel minutè mucronulato-denticulata, subtùs glauca araneoso-pubescentia, suprà puberula. Corymbi terminales, multiflori; capitula longè pedicellata. Involucri squamæ inæquales, apice scariosæ, ciliatæ, dorso carinatæ, in anthesi arctè imbricatæ, posteà laxæ. Flores radii pauci circiter 12, ligulis ellipticis breviter tridentatis, lilacini. Styli rami breviter exserti, lineares; pappus disci conformis. Flores disci hermaphroditi, infundibuliformes; limbo 5-fido, laciniis revolutis, lutei. Stamina 5; antheris basi ecaudatis, apice breviùs appendiculatis. Styli rami breves, lanceolati, plani. Achenium compressum, pilosum. Pappus setosus, uniserialis; setis inæqualibus, serrato-scabris, ferrugineis. Receptaculum alveolatum, marginibus dentatis.

§ Bellieæ.

96. Myriactis oleosa; erecta, glabra, ramis rigidis, foliis inferioribus lyratis pinnatifidis petiolatis superioribus lanceolatis sessilibus mucronato-dentatis hispidulis, capitulis subsphæroideis, involucri squamis biserialibus, receptaculo in radio muricato in disco tuberculato.

Hab. Himala, in ruderatis, alt. ped. 6000–8000.

Caulis erectus, glaber, ramis rigidis brevibus. Folia inferiora petiolata, lyrata et pinnatifida, obtusa, superiora sessilia lanceolata acuta integerrima mucronulato-denticulata, utrinque hispidula vel subglabra, subtùs pallidiora. Ramuli pauciflori. Pedunculi axillares terminalesque, monocephali. Capitulum sphæroideum; floribus radii innumeris fœmineis, disci numerosis hermaphroditis. Involucri squamæ biseriales, exteriores longiores herbaceæ, interiores scariosæ lineari-lanceolatæ acutæ.

Flores radii ♀ breviter ligulati; tubo brevi, pilis articulatis capitatis glanduloso; ligulâ ovatâ, integrâ, tubo paulò longiore. Achenia obliquè ovata, compressa, marginata, lævia, glabra, tenuissimè striata, basi stipitata, stipite in receptaculo persistente.

Flores disci ☿ tubulosi, tubo brevi glanduloso, limbo 4-fido, laciniis latis acutis. Stam. 4; antheris ecaudatis, apice breviter appendiculatis. Styli rami breves, acuti. Achenia compressa, obovata; costis 4 incrassatis, duabus marginem formantibus, duabus lateralibus quandoque evanidis, in tuberculis sessilibus. Receptaculum subcylindraceum, in circumferentiâ cum stipitibus persistentibus florum radii muricatum, in disco subplano tuberculatum.

Semina oleifera, unde nomen specificum.

Affinis *M. Nepalensi*, sed habitu rigidiore capitulis majoribus glabritieque distincta, floribus radii integris nec emarginatis.

97. MYRIACTIS (*vel potiùs Botryadenia*) GRACILIS; hirsutiuscula v. subglabra, involucri squamis subuniserialibus æqualibus margine scarioso vix lacero, floribus radii vix biserialibus.

Hab. Himala, in sylvis, ad alt. ped. 8000–9000. Nagkanda.

Herba annua, hirsutiuscula; caulis erectus, ramosus. Rami striati, pilis brevibus albis vix hirsuti. Folia alterna, petiolata, ovato-lanceolata, basi in petiolum attenuata, apice acuminata, repando-dentata, dentibus mucronulatis subglabris, utrinque sub lente pilis parvis albis sparsè (præsertim in nervis) puberula, suprà lætè viridia, subtùs pallida; superiora lineari-lanceolata, integra, subsessilia. Ramuli oligocephali. Pedunculi longi, graciles, bracteis subulatis quandoque nullis, 1-cephali. Capitula parva, radiata; floribus radii vix biserialibus, disci numerosis tetrameris. Involucri squamæ subuniseriales, subæquales, nullis in pedunculo sejunctis, lineari-lanceolatæ, acutæ; exterioribus herbaceis, pilosis, marginatis, apice scarioso colorato subintegro; interioribus scariosis, nervo medio tantùm herbaceo, margine vix lacero nec ciliato.

Flores radii ♀ vix biseriales, ligulati; tubo brevi glanduloso, ligulis angustis revolutis apice integris lilacinis albidisve; stylus purpureus, ramis rectis. Achenia conformia.

Fl. disci ☿ lutei, infundibuliformes, tubo glanduloso hirsuto, limbo 4-fido, laciniis acutis. Stam. 4; antheris ecaudatis, apice brevissimè appendiculatis. Stylus luteus; ramis acutis, lineis stigmatosis marginantibus ante apicem desinentibus. Achenia lævia, glabra, nitida, compressa, obovata, basi attenuata, cicàtrice in apicem notata, margine incrassato, lateribus planis. Receptaculum tuberculatum.

Differt a *M. Gmelini* squamis involucri vix bi- nec 3-serialibus, exterioribus non brevioribus nec ullis in pedunculo sejunctis; a *M. Wallichii* (quæ etiam 4-mera est, dùm *M. Gmelini* 5-mera) squamis paucioribus nec lacero-ciliatis, ligulis vix bi- nec triseriatis, capitulis minoribus et habitu graciliore. At forsan tres in unam conjungendæ sunt, et meâ sententiâ a *Myriactine* avellendæ, et generi *Botryadeniæ* rursùm referendæ: a *M. Nepalensi* et *M. oleosâ* differunt plurimis notis, præcipuè formâ receptaculi, acheniis radii et disci conformibus, radii floribus longiùs ligulatis.

§ CONYZEÆ.

98. CONYZA POLYCEPHALA; erecta, ramosissima, infernè glabra supernè puberula, foliis lineari-lanceolatis acuminatis distanter serrulatis glabris, corymbis paniculatis foliosis, pedicellis 1-cephalis, capitulis multifloris, fl. radii numerosis ♀ brevissimè tubulosis 3-dentatis; disci ☿ 2–5 quinquefidis roseis, squamis involucri linearibus margine scariosis acuminatis biserialibus.

Hab. In Indiæ provinciis boreali-occidentalibus, ad ripas fluviorum. Dadupur ad Jumnam, Bhogpur ad Gangem, &c.

Herbacea, erecta, ramosissima, perennis, 3–4 pedalis, infernè glabra, supernè puberula. Rami teretes. Folia lineari-lanceolata, acuminata, distanter serrulata, glabra, scabriuscula, basi attenuata, subsessilia. Corymbi paniculati, ramosissimi, foliosi; pedicellis 1-cephalis, plùs minùsve pubescentibus, bracteatis. Capitula multiflora, subcylindrica. Involucri squamæ lineares, acuminatæ, margine scariosæ, biseriales, exteriores paulò breviores, medio glanduloso-puberulæ, ceterùm glabræ.

Flores radii ♀ innumeri, brevissimè tubulosi, tubo truncato 3-dentato, stylo 6plò breviore. Flores disci ☿ 2–5, tubulosi, 5-fidi, albido-rosei. Antheræ ecaudatæ, breviter appendiculatæ, purpureæ. Styli rami plani, lineares, puberuli. Achenia ovata, compressa, puberula. Pappus simplex, albus, longus, 1-serialis; setis paucis, scabriusculis, vix basi in annulum connexis; discalis et radialis omninò conformis. Receptaculum planum, asperum.

Conyzæ subgenus novum.

Involucrum laxum, biseriale, 10-phyllum; squamis ovato-lanceolatis, margine hyalino lato, æqualibus, acutis. *Pappus* radii pauci-setosus; disci biserialis, pluri-setosus, brevior ac rigidior. *Receptaculum* radio tuberculatum, disco planum.

99. Conyza marginata; decumbens, hirtella; foliis lanceolatis obtusis basi attenuatis, corymbis oligocephalis, involucri squamis latè lanceolatis margine hyalinis, floribus radii ♀ brevissimè tubulosis 3-dentatis; disci paucis ☿, pappo discali radiali rigidiore breviore et crebriore.

Hab. In arvis arenosis prope Lodihana, prov. Sirhind, Ind. Bor.-Occ. Floret Aprili.

Annua, decumbens, pilis planis albis hirsutiuscula. Rami purpurascentes. Folia oblongo-lanceolata, basi attenuata, apice obtusa, integra v. denticulata. Corymbi oligocephali, pedicellis gracilibus (plerumque 5). Capitula subcylindrica, multiflora. Involucrum laxum, 10-phyllum. Squamæ biseriales, ovato-lanceolatæ, margine lato hyalinæ, æquales, apice acutiusculæ, sublaceræ, mucronulatæ, 5 exteriores paulò latiores.

Flores radii ♀ innumeri, tubo brevissimo truncato 3-dentato extùs piloso stylo multoties breviore. Pappus 1-serialis; setis basi in annulum connexis, tenuissimis, scabriusculis, albis v. rufescentibus.

Flores disci ☿ 6–10, tubulosi, purpurei, tubo 5-dentato. Antheræ ecaudatæ, apice breviter appendiculatæ. Styli rami lanceolati, extùs pubescentes. Achenium lateraliter compressum, ovatum, minutissimè pilosum. Pappus biserialis; setis in annulum basi connexis, subæqualibus, scabris, rigidioribus brevioribusque quam in radiali. Receptaculum in radio elevatum tuberculatum, in disco cavum punctatum.

100. PHAGNALON NIVEUM; decumbens, niveo-lanuginosum, foliis lineari-lanceolatis sessilibus amplexicaulibus margine revolutis, involucri squamis subulatis acuminatis exterioribus lanuginosis interioribus scariosis.

Hab. Himala, in rupibus, in valle fl. Dhawli prope Simangente, Garhwál Orientalis. Oct.

Suffrutex niveo-lanuginosa, semipedalis; ramis decumbentibus ramosis. Folia amplexicaulia, breviter decurrentia, lineari-lanceolata, apice obtusa, margine revoluta. Pedunculi solitarii, 1-cephali, terminales axillaresve unibracteati. Capitula cylindrica, arctè imbricata, squamis 1–2 sejunctis suffulta. Involucri squamæ subulatæ, acuminatæ, exteriores breviores lanuginosæ, interiores scariosæ.

Flores radii pluriseriales ♀ tubulosi, breviter 4-dentati, stylo exserto. Achenia et pappus conformia.

Flores disci pauci ☿ tubuloso-infundibuliformes, 5-fidi. Antheræ basi breviter caudatæ, apice appendice oblongâ, emarginatâ. Styli rami breves, apice truncati, hirtelli nec penicillati. Achenia compressa, pilosa. Pappus uniserialis albus, setis paucis scabriusculis. Receptaculum planum, brevissimè alveolatum.

Differt a *P. saxatili* foliis amplexicaulibus squamisque lanuginosis; a *P. rupestri* squamis acutis.

Genus forsan ad *Gnaphalieas* potiùs referendum, ob styli ramos truncatos *Senecioideos*, antherasque caudatas. Caudas antherarum quamquam breves in *P. saxatili* etiam inveni, difficiliter detectas.

INULÆ subgen. novum, LEUCACTIS.

Flores radii 1-seriales, fœminei, ligulati, heterochromi, 3-dentati. *Involucri* squamæ exteriores laxæ, foliaceæ. *Pappus* setis capillaribus, scabris, apice paulò incrassatis. *Antherarum* appendices emarginatæ.

101. INULA NITIDA; caulibus erectis junioribus hispidis demùm glabratis, foliis lanceolatis utrinque attenuatis distanter denticulatis v. integris dentibus mucronulatis margine breviter revolutis, pedunculis axillaribus terminalibusque corymbum laxum formantibus, involucri squamis pluriserialibus: exterioribus apice foliaceis laxis: interioribus scariosis ovatis brevibus: intimis oblongis longioribus: omnibus acutis ciliatis, ligulis albis.

Hab. Himala, ad alt. ped. 8000–9000, in rupibus. Tilona Khal, Garhwál Orientalis. Sept.

Perennis, herbacea v. suffruticosa; caules erecti, parcè ramosi, juniores pilis articulatis hispidi, demùm glabrati. Folia lanceolata, utrinque attenuata, breviter petiolata, acuta, penninervia, nervis obliquis, distanter dentata vel subintegra, dentibus calloso-mucronu-

latis, margine breviter revoluto, pilis paucis basi bulbosis brevibus hispidula, ceterùm glabra, lævia, nitida. Pedunculi axillares terminalesque, 1–3-cephali, corymbum laxum formantes, tomentosi. Capitula multiflora. Involucri squamæ imbricatæ, pluriseriales; exteriores (unâ serie) laxæ, apice foliaceæ, hispidè pubescentes; interiores secundæ seriei subscariosæ, ovatæ, ceteris breviores; internæ tertiæ seriei oblongæ, scariosæ; omnes acutæ, ciliatæ.

Flores radii ♀ uniseriales; ligulis albis, patentibus, 3-dentatis. Styli rami lineares. Achenia conformia.

Flores disci lutei, numerosi ☿, longe tubulosi, 5-dentati, margine incrassato, dentibus acutiusculis. Stam. 5; antheris basi longè bicaudatis, caudis setiformibus, apice appendice brevi, oblongâ, emarginatâ. Styli rami longi, lineares. Achenium teres, pubescens. Pappus longus, albus, uniserialis, setis scabris apice paulò incrassatis, pilis supremis achenii quasi calyculatus.

102. INULA ASPERRIMA; hispidè hirsuta, caulibus subflexuosis ramosis, foliis lanceolatis subsessilibus acutè grossè dentatis utrinque hispidè hirsutis, ramulis sub 1-cephalis, involucri squamis exterioribus 2-serialibus foliaceis: interioribus scariosis apice acutis subfoliaceis ciliatis.

Hab. Himala, in rupibus, alt. ped. 5000–8000. Masuri, Simla, Sirmúr. Floret Maio—Novembri.

Perennis, suffruticosa; caulibus ramosis; rami flexuosi, erecti, pilis longis articulatis hispidè hirsuti. Folia alterna, lanceolata, subsessilia, utrinque acuta, utrinque pilis articulatis basi bulbosis hirsuta, bulbis persistentibus aspera, in nervis molliter hirsuta, grossè dentata, margine revoluta, dentibus calloso-mucronulatis (3 poll. longa, 1 lata). Ramuli axillares, monocephali. Capitula majuscula, radiata. Involucri squamæ pluriseriales; exteriores 2–3-seriales laxæ, foliaceæ, hirsutæ, interiores scariosæ, apice acutæ, subfoliaceæ, omnes ciliatæ, lineares vix lanceolatæ (secundi ordinis nec ovatæ nec extimis breviores ut in præcedenti).

Flores radii uniseriales albi, ligulis 3-dentatis. Styli rami divergentes, puberuli. Achenia conformia.

Flores disci plurimi ☿ longè tubulosi, tubo glabro breviter 5-dentato, margine incrassato. Stam. 5; antheris longè caudatis, caudis setiformibus, apice appendice oblongâ, emarginatâ. Styli rami longi, lineares. Achenium teres, pilosum, pilis superioribus pappi seriem exteriorem æmulantibus. Pappus 1-serialis, albus, setis scabris, apice paulò incrassatis.

Affinis videtur *Inula nervosa*, Wall. no. 70, DeC. quæ forsan eædem sectioni referenda si flores radii albi; differt autem ab his pappo apice magis barbellato, et formâ squamarum involucri appendicumque antherarum.

Subtrib. ECLIPTEÆ.

103. BLAINVILLEA HISPIDA; hispida, foliis oppositis petiolatis latè ovatis basi cuneatis apice breviter acuminatis dentatis, capitulis axillaribus, pedunculis petiolis plùs duplò longioribus, florum radii ligulis latis 3-dentatis: acheniis 3-aristatis; disci biaristatis sæpè aristis 0.

Hab. Himala, in arvis, alt. ped. 4000–5000. Junio.

Annua, erecta parcè ramosa, hispida. Caulis striatus. Folia opposita, longiusculè petiolata, latè ovata basi cuneata, v. rhomboidea apice breviter acuminata, dentata, utrinque pilis adpressis solitariis geminisque hispida ($1\frac{1}{2}$–$3\frac{1}{2}$ pollices longa, $\frac{1}{2}$–$2\frac{1}{2}$ lata). Pedunculi axillares, 1-cephali, petiolo plus 2plò longiores. Involucri squamæ laxæ, 5 exteriores herbaceæ, latè lanceolatæ, acutæ, extùs hispido-puberulæ; interiores cum paleis conformes, flores arctè amplectentes, scariosæ, oblongæ, apice truncatæ, lacero-dentatæ, puberulæ, acutè carinatæ, carinâ hispido-ciliatâ. Flores radii 5, tubo brevissimo, ligulâ latâ, basi cuneatâ, apice 3-dentatâ, flavâ. Achenium 3-angulare, basi angustatum, apice truncatum, apice angulisque hispidum, rugosum. Pappus, junior duplex; interior coroniformis lacerus, marcescens; exterior 3-dentatus; posteà in aristas 3 basi barbatas (sæpè abortivas), auctus. Flores disci paleis arctè amplexi, tubulosi, 5-dentati. Stam. 5; antheris nigris, basi truncatis, ecaudatis, apice breviter appendiculatis. Styli rami breves, acuti, extùs pilosi, intùs lineis stigmatosis marginantibus apicem ferè attingentibus, confluentibus. Pollen echinatum. Achenium rugosum, compressum, basi angustatum, 4-angulare v. angulis 2 evanidis, angulis et apice truncato hispidum. Pappus, junior duplex, interior ut in ♀, exterior 4-dentatus, dentibus 2 in aristas auctis.

Differt a *B. latifoliâ*, DeC. v. p. 492, pedunculis petiolo multò longioribus, floribus flavis.

104. BLAINVILLEA ALBA; puberula, foliis alternis subopposititisque brevè petiolatis angustè lanceolatis longè acuminatis mucronato-serratis, pedunculis 1-cephalis petiolo plùs 4plò longioribus, florum radii ligulis obcordatis, acheniis rugosis radii 3-aristatis disci biaristatis v. exaristatis.

Hab. Pinjor Dhún, in arvis, Prov. Sirhind, Indiæ Bor.-Occ. Sept.

Annua, erecta, dichotomè ramosa; rami infrà glabri, supernè puberuli; folia alterna, opposita v. subopposita, brevè petiolata, subtrinervia, angustè lanceolata, basi attenuata, apice longè acuminata, acuta, serrata, serraturis mucronulatis, utrinque pilis brevibus adpressis hispidulè puberula. Pedunculi 1-cephali, axillares et subaxillares terminalesque, puberuli, petiolis plus 4-plò longiores. Capitula pauciflora, erecta. Involucri squamæ exteriores 4–5 foliaceæ, latè lanceolatæ, acutæ, extùs puberulæ, trinerviæ, ciliatæ; interiores scariosæ, cum paleis conformes, oblongæ, truncatæ, apice laceræ, hispidulæ, carinatæ, flores arctè amplectentes. Flores radii albi 4–5; tubo brevi, ligulâ obcor-

datâ (ferè ad medium bifidâ). Stylus exsertus, ramis planis acutis. Achenia triquetra, angulis acutis hispidis basi angustatis, triaristata, pappo interiore coroniformi marcescente, rugosa, sæpè sterilia. Fl. disci ☿ circiter 8–10, tubulosi, breves, 5-fidi, albi. Stam. 5; antheris nigrescentibus, basi obtusis, ecaudatis, apice appendiculatis. Styli rami acuti, extùs papilloso-pubescentes, intùs lineis stigmatosis marginantibus. Achenium subtriquetrum, apice et angulis hispidulum, ceterùm glabrum, rugosum; pappo interiore marcido, exteriore in aristas 2 (rarò 3) aucto.

Differt a præcedenti formâ et pubescentiâ foliorum ligularumque et colore. An *B. latifolia* var. *angustifoliæ*, DeC.? at pedunculis longis et formâ foliorum, quæ serrata nec grossè dentata, ligularumque differt.

Trib. Senecionidæ. Subtrib. Anthemideæ.

105. Pleiogyne cardiosperma; junior villosa, glabrata, ramis prostratis, foliis pinnatifidis, pedunculis 1-cephalis, floribus radii brevissimè bilabiatis; disci tubulosis 4-meris, acheniis radii obcordatis bialatis; disci exalatis.

Hab. In Prov. Sirhind et Saharunpoor, Ind. Bor.-Occ., inundatis. Jan.—Dec.

Annua, radiatim prostrata; junior pilis longis tenuibus villosa, demùm glabrata glauca; rami striati (3–6 unciales). Folia alterna, pinnatifida, apice dilatata, segmentis inferioribus terminalibusque integerrimis, mediis inciso-dentatis pinnatifidisve, omnibus acutis apice callosis, sessilia, amplexicaulia nec decurrentia. Pedunculi axillares 1-foliati, graciles, 1-cephali. Capitula explanata. Involucri squamæ 2-seriales, oblongæ, margine scariosæ, obtusæ, integræ, glabræ, 1-nerves, florum longitudine. Flores radii ♀ 3–4-seriati, plurimi: corolla brevissima tubo nullo, vel ligulata ligulâ ovatâ integrâ, vel bilabiatâ labio altero breviore, persistens. Stylus longè exsertus, breviter 2-fidus. Ovarium ovatum, glabrum, stipitatum. Achenium maturum compressum, obcordatum, æqualiter bialatum, alis basi angustioribus, apice achenium et corollam stylumque persistentes superantibus, latioribus. Flores disci ☿ plurimi, 4-fidi, tubo angusto brevi, supra campanulato 4-dentato. Stamina inclusa. Stylus breviter 2-fidus; ramis truncatis, apice brevissimè penicillatis. Achenia ovata, glabra, compressa, exalata. Receptaculum planum, in radio stipitibus persistentibus muricatum, in disco punctatum.

Cotula anthemoides γ, DeC. p. 79; species distinctissima acheniorum alis æqualibus et basi angustatis nec ovatis uno latere latiori, corollâ bilabiatâ nec tantùm ligulatâ, necnon glabritie et facie laxiore.

106. Artemisia (*Abrotanum*, § *Polycarpæa*) hypoleuca; caule cano-tomen-

toso infernè glabro, foliis bipinnatifidis; segmentis pinnatifidis integrisve acutis mucronulatis suprà tomentosis subtùs niveo-lanuginosis, capitulis ovoideis, involucri lanuginosi squamis linearibus acutis.

Hab. Himala, ad alt. ped. 7000–8000. Nagpur in Garhwál Orientali.

Erecta; caules angulosi, infernè glabri, suprà cano-tomentosi. Folia sessilia, bipinnatifida; segmentis pinnatifidis integrisve, plerumque cuneatis 3-fidis; laciniis lineari-lanceolatis acutis mucronatis; suprà tomentosa, subtùs niveo-lanuginosa. Spicæ axillares terminalesque, 12–4-cephali. Capitula sessilia, foliolo subulato acuto hirsuto bracteata, ovoidea, densè lanuginosa. Squamæ extùs lanatæ, lineares, acutiusculæ, nervo medio tantùm herbaceæ, scariosæ, apice sublaceræ; interiores hyalinæ. Flores radii ♀ tubulosi, truncati, squamis breviores; styli rami longi, lineares, divaricati v. revoluti. Flores disci ☿ tubulosi, 5-dentati, dentibus acutis, purpurei. Stam. 5; antherarum appendiculis acutis, scariosis. Styli rami breves, truncati. Achenia glabra, striata.

107. ARTEMISIA REVOLUTA; caulibus pubescentibus demùm glabratis, foliis bipinnatifidis; segmentis linearibus revolutis suprà glabris subtùs cano-tomentosis, capitulis sessilibus ovoideis, squamis pubescentibus carinatis oblongis obtusis sublaceris.

Hab. Himala, ad alt. ped. 8000–9000. Júma in Garhwál Orientali.

Erecta; caules ramosi, pubescentes, demùm glabrati, angulati, purpurascentes. Folia bipinnatifida, segmentis linearibus revolutis acutis callosis, suprà glabra, subtùs cano-tomentosa. Spicæ axillares terminalesque, paniculam angustam formantes. Capitula sessilia, ovoidea, foliolo subulato bracteata. Squamæ exteriores herbaceæ, pubescentes, sublanuginosæ, carinatæ; interiores scariosæ, obtusæ, 1-nerviæ, sublaceræ. Flores radii ♀ truncati, disci 5-meri purpurei. Achenium subteres, ovoideum, minutè striatum, nitidum.

108. ARTEMISIA WADII; erecta, ramosa, foliis quadripinnatifidis: segmentis dentatis integrisve acutis glabris; superioribus linearibus stipulatis, paniculis amplis laxis, capitulis pedicellatis globosis luteis, involucri squamis lanceolatis ovatisque glabris.

Hab. In horto Clar. Equ. Wade, apud Lodihana, verosimiliter ex seminibus Cashmiricis.

Erecta, ramosa; ramis acutè angulatis glabris. Folia glabra v. secus nervos puberula; inferiora quadripinnatifida, segmentis explanatis dentatis integrisve acutis, petiolata, ad basin petioli laciniis duabus stipulæformibus pinnatifidis, etiam ad basin pinnæ laciniâ simili pinnatifidâ 1; superiora sensim minora, ultima linearia, omnia stipulata, laciniâ

stipulari folio simili. Racemi gracilés, axillares terminalesque, paniculam laxam amplam formantes. Capitula pedicellata, globosa, nutantia, lutea. Involucri squamæ obtusæ, glabræ; exteriores parvæ, lineares, herbaceæ; secundi ordinis lanceolatæ, nervo medio herbaceo; interiores latè ovatæ, scariosæ, enerves. Flores radii ♀ breviter tubulosi, extùs glandulosi; stylus breviter exsertus. Flores disci ☿ tubulosi, lutei; antherarum appendicibus acutis, submucronatis; styli rami truncati, penicillati. Ovaria glabra. Achenia matura non vidi.

Affinis videtur *A. ponticæ*, DeC. no. 90; differt paniculâ laxiore, foliis glabris v. puberulis nec incanis, floribus ♀ glandulosis. Odoratissima, etiam post 5 annos sicca.

109. ARTEMISIA (*Monocarpæa*) STRICTA; subglabra, caulibus strictis, foliis parvis pinnatifidis sessilibus: segmentis linearibus, spicis axillaribus cauli adpressis oligocephalis, capitulis ovoideis subglabris, squamis ovatis v. lanceolatis scariosis acuminatis, floribus radii ♀ urceolatis, acheniis glabris striatis.

Hab. Himala, ad alt. ped. 10,000–11,000. Pharkia.

⊙ Caulis erectus, striatus, ramis nullis, subteres, striatus, pilis paucis debilibus subglaber. Folia parva, bipinnatifida v. pinnatifida, sessilia, laciniis 2 stipuliformibus linearibus; segmentis linearibus, cuneatis, acutis, mucronulatis. Spicæ axillares, cauli adpressæ, terminalesque, oligocephalæ. Capitula sessilia, ovoidea. Squamæ involucri ovatæ et lanceolatæ, acutæ; exteriores subglabræ, herbaceæ, latiores; interiores angustæ, scariosæ, acuminatæ. Flores radii ♀ pauci, urceolati, tubo apice coarctato bidentato basi inflato, achenio latiores; styli longè exserti, ramis brevibus linearibus, sæpè steriles. Flores disci ☿ tubulosi; antherarum appendicibus acutissimis; styli rami breves, truncati, penicillati. Achenia parva, teretia, glabra, striata, nitida, disco epigyno parvo apiculata. Receptaculum conicum nudum.

Affinis videtur *A. pinnatifidæ*.

Subtrib. GNAPHALIEÆ.

110. LEONTOPODIUM MONOCEPHALUM; repens, cano-lanuginosum, foliis ovatis rosulatis, capitulo terminali solitario foliis involucrantibus auctis densè lanatis circumdato, squamis sphacelatis acutis mucronatis.

Hab. Himala, ad alt. ped. 12,000–15,000. Gastoli versus portum Mána.

Repens, omninò densè cano-lanuginosum; rami prostrati, apice rosulati. Folia ovata, obtusa, cano-tomentosa; in ramo fertili superiora majora, densissimè lanâ lutescente involuta (eo absterso acuta) involucrantia. Capitulum solitarium, terminale. Squamæ

sphacelatæ, mucronatæ, interiores angustæ. Flores radii tubulosi ♀, truncati, pauci; disci tubulosi, 5-fidi, laciniis angustis; antheris fuscis, longè caudatis; styli rami breves, truncati, penicillati. Pappus pilosus, setis apice dilatatis serrato-scabris, achenio multò longior. Receptaculum parvum, nudum.

Subtrib. EUSENECIONEÆ.

111. SENECIO PEDUNCULATA; annua, erecta, ramosissima, puberula, foliis petiolatis pinnatifidis: laciniis linearibus obtusis glabris, floralibus setaceis, capitulis longè pedicellatis laxissimè corymbosis erectis cylindricis, floribus radii 5 ligulatis, acheniis puberulis striatis.

Hab. Himala, ad alt. ped. 8000–11,000. In valle fl. Dhawli, Garhwál Orient.

Annua, erecta, ramosissima, puberula (pilis paucis sparsis albis); folia petiolata, pinnatifida, laciniis linearibus obtusis, floralia setacea. Capitula longè pedunculata, axillaria terminaliaque, corymbum laxissimum formantia, erecta, cylindrica. Involucri squamæ biseriales; exteriores brevissimæ, adpressæ; interiores erectæ, lineares, acutæ, margine scariosæ, apice sphacelatæ, post anthesin deflexæ. Flores radii ♀ 5 brevè ligulati; disci tubulosi, 5-fidi; antherarum appendicibus obtusis. Pappus simplex, sericeus, vix scaber. Achenium puberulum, striatum. Receptaculum planum, punctatum.

112. SENECIO LÆTA; erecta, tenuiter lanuginosa, demùm glabrata, foliis caulinis petiolatis v. amplexicaulibus lyratis basi plus minus pinnatifidis segmentis obtusis, capitulis pedunculatis paucis vix corymbosis majusculis, floribus radii 4-nervibus, acheniis glabris.

Hab. Himala, ad alt. ped. 9000–10,000. Badhrináth.

Caules erecti, lanugine tenui vestiti, demùm glabrati. Folia caulina inferiora petiolata, petiolis amplexicaulibus, superiora auriculata, suprema sessilia, omnia lyrata, infrà plus minus pinnatifida, segmentis obtusis. Capitula pedunculata, pauca, vix corymbosa, majuscula. Involucri squamæ extùs pilosæ, exteriores brevissimæ, interiores oblongæ, acutæ, ciliolatæ, marginatæ, sphacelatæ. Flores radii ♀ (circiter 15) longè ligulati, patentes, 4-nerves, nervis 2 submarginantibus, 3-dentati, aurei. Flores disci tubulosi; antheris 5 appendice acutiusculâ, filamentorum articulis nodosis. Pappus simplex, pilis serrato-scabris. Achenia glabra, apice incrassato.

Affinis *S. Chrysanthemoidi* var. *stipulatæ*; differt capitulis paucis majoribus, laciniisque foliorum obtusis.

113. SENECIO FLEXICAULIS; subglabra, ramis flexuosis, foliis petiolatis pinna-

tifidis : segmentis lateralibus oblongis irregulariter dentatis terminali longè acuminato; floralibus lanceolatis, paniculâ subsecundâ flexuosâ, pedicellis apice tumidis squamellatis, floribus radii 12–13 extùs pubescentibus 4-nervibus, acheniis hispidulis 5-costatis.

Hab. Himala, ad alt. ped. 7000–8000, in valle Vishnuganga, Garhwál Orientalis.

Erecta, ramosa (nec verè scandens), minutissimè puberula v. subglabra; ramis flexuosis, striatis. Folia petiolata, pinnatifida, basi angustata, segmentis lateralibus oblongis, terminali 3-angulari basi subtruncato, apice longè acuminata, irregulariter sinuato-dentata, dentibus mucronatis; subtùs pallida, glabra; floralia lineari-lanceolata, integra. Panicula laxa, subsecunda, flexuosa. Pedicelli apicem versus tumidi, squamellati. Involucrum ovoideum biseriale; squamæ exteriores 5 brevissimæ, adpressæ; interiores (circiter 13) erectæ, basi subcoalitæ, oblongæ, acutæ, scariosæ, marginatæ, apice pubescente, ciliolatæ, sphacelatæ. Flores radii 12–13 ♀, ligulâ ovali brevissimè 3-dentatâ, 4-nervi, extùs pubescentes, flavi. Stylus acheniumque conformes. Flores disci ☿ tubulosi, 5-dentati, e flavo rubescentes. Antheræ semi-exsertæ ♂ appendice brevi obtusâ, filamenti articulo vix nodoso. Achenium hispidulum, 5-costatum, subpentagonum. Pappus sericeus, setis scabriusculis.

Affinis *S. Hindsii*, Benth., et *S. campylodes*, Wall.; differt floribus pluribus, folioque acuminato, petiolato.

114. MADARACTIS LANUGINOSA; cano-lanuginosa, foliis petiolatis ovatis sinuato-dentatis subtùs cano-lanuginosis, corymbis 3–4-floris, acheniis radii glabris calvis disci pilosis papposis.

Hab. In rupibus ad Mándú, Montibus Vindhiæ, Indiæ Centralis. Januario.

Suffruticosa, ramis diffusis, cano-lanuginosis, demùm glabris. Folia petiolata, ovata, grossè sinuato-dentata, dentibus callosis, suprà tomentosa, glabrata, subtùs cano-lanuginosa; petiolo laciniâ stipulæformi et sæpè in medio laciniis 1–2 oblongis aucto, laminam subæquante. Ramuli axillares, 3–4-cephali, vix corymbosi; capitula subhemisphærica. Involucri basi lanuginosi squamæ exteriores breves, apice sphacelatæ, interiores lineares margine scariosæ acutæ, post anthesin reflexæ. Flores radii steriles 12–13, stylo omninò nullo, tubo longo involucrum superante, ligulâ amplâ, lanceolatâ, 5-dentatâ, 4 nervi, flavâ, patente. Achenia longa, teretia, glabra, apice calva. Flores disci tubulosi, numerosi ☿ 5-meri; stam. 5 ♂ filamentis ad articulum nodosis; antheris ecaudatis, appendice ovatâ acutiusculâ. Styli rami truncati, penicillati. Achenia costata, pilosa. Pappus achenio paulò longior, pilosus, setis albis scabris.

Trib. CYNAREÆ. Subtrib. CARLINEÆ.

115. SAUSSUREA SACRA; densè lanata, foliis linearibus runcinatis subtùs cano-tomentosis, corymbo terminali polycephalo folia involucrantia lanâ ferrugineâ densè obtecta superante.

Hab. Himala, ad alt. ped. 13,000–16,000, supra Badhrináth versus portum Mána.

Erecta, palmaris, tota lanâ densè vestita, basi paulò glabrata. Radix perpendicularis, furcata. Caulis erectus, fistulosus, simplex, densè foliosus, basi reliquiis marcidis foliorum squamatus. Folia patentia, petiolata, linearia, runcinata, laciniis acutiusculis margine revolutis, (lanâ abstersâ) suprà glabra, subtùs cano-tomentosa; superiora sensim majora, integerrima, lanâ ferrugineâ densiùs involuta. Capitula numerosa, in corymbo terminali subglomerata, folia involucrantia superante. Squamæ lineares, integræ, lanatæ. Flores tubulosi, tubo longo filiformi, fauce campanulati. Antheræ longæ, appendice acutâ, basi breviter setoso-caudatæ. Stylus basi bulbosus, nodo sub ramis brevibus incrassato penicillato. Achenia glabra, basi teretiuscula, apice 4-angularia, striolata. Pappus duplex; exterior setosus, brevior, albus, setis serrato-scabris; interior squamoso-pilosus, duplò longior, sordidus, squamis setaceis basi in annulum concretis, plumosis. Receptaculum setosum.

In templis apud Badhrináth sanctissimis Indorum pro Nelumbio uti dolum in sertis offertur; ideo "sacram" nominavi; hoc usu in templis Kedamath, Pungnath, &c. *S.* (*Aplotaxis*, DeC.) *obvallata* occurrit, ambæ et monticolis Indicè *Kunwal* (id est, *Nelumbium*) appellantur. *Aplotaxis obvallata* et *discolor* (DeC.) sunt *Saussureæ* veræ; series exterior pappi cito decidit, quapropter in sicco sæpe *Aplotaxidis* faciem præbent. Nomen *discolor* mutandum et *S. piptathera* vocanda propter setas exteriores caducas.

116. APLOTAXIS SCAPOSA; foliis radicalibus obovatis in petiolum attenuatis suprà scabris subtùs cano-tomentosis, scapis 3-cephalis, capitulis pedunculatis basi arachnoideis.

Hab. Himala, ad alt. ped. 4000–7000, in graminosis apricis vulgata.

Rhizoma crassum. Folia omnia radicalia, obovata, in petiolum attenuata, integerrima v. subpinnatifida, suprà scabra pallidè, subtùs cano-tomentosa. Scapi aphylli, 3-cephali, pedunculis longis 1-bracteatis arachnoideis (6–12 pollicaribus). Capitula subglobosa, basi arachnoidea. Squamæ imbricatæ, exteriores breviores, subpungentes, interiores scariosæ, subulatæ, acutæ. Flores tubulosi, fauce ventricosi; antherarum appendices rigidæ, exsertæ; caudæ breves, glabræ, pellucidæ. Stylus ad nodum puberulus, ramis brevibus acutis. Pappus exterior e squamellis latis, fuscis, basi interioris arctè adpressis, coroniformis, persistens; interior squamoso-pilosus, squamis setaceis, uniserialibus,

albis, plumosis, basi in annulum concretis, caducus. · Receptaculum squamosum, squamis piliformibus achenia æquantibus.

117. APLOTAXIS FOLIOSA; erecta, ramosa, parcè arachnoidea, foliis lyrato-pinnatifidis amplexicaulibus subtùs cano-tomentosis suprà scabris, pedunculis terminalibus 1-cephalis paniculam racemosam foliosam formantibus, acheniis rugoso-scrobiculatis apice cupulâ denticulatâ coronatis, pappo plumoso.

Hab. Himala, ad alt. ped. 8000–9000, in sylvis, infra Badhrináth.

Erecta, ramosa, arachnoideo-lanata, demùm subglabrata. Rami striati, teretes. Folia lyrata v. runcinata, amplexicaulia nec decurrentia, auriculata, laciniis obtusis mucronato-denticulatis, suprà subglabra scabriuscula, subtùs cano-tomentosa. Ramuli florales axillares, 1-cephali, pedunculo terminali 1-squamato, paniculam racemosam foliosam formantes. Capitula ovata, squamæ laxè imbricatæ, lineares, subspinoso-mucronatæ, exteriores basi arachnoideæ apice glabræ, interiores basi glabræ apice ciliatæ. Flores tubulosi, tubo longo, fauce campanulatâ, purpurascentes. Stam. 5, filamentis glabris, antheris longis, basi bicaudatis setis glabris, apice appendice brevi acutâ. Stylus vix sub ramis pubescentibus incrassatus. Achenia teretiuscula, obliquè subcurva, rugoso-scrobiculata, apice cupulâ denticulatâ solidâ pappo calycante persistente superata. Pappus 1-serialis, in annulum concretus, plumosus. Receptaculum squamosum; squamis laciniatis, setosis, achenia superantibus.

Subtrib. CENTAUREÆ.

118. TRICHOLEPIS NIGRICANS; foliis lanceolatis dentatis subtùs adpressè pubescentibus suprà scabris, capitulis terminalibus solitariis, squamis involucri exterioribus basi dilatatâ glaberrimis intimis oblongis apice puberulis.

Hab. Himala, in graminosis, ad alt. ped. 7000–8000. Madmesar, Garhwál Orient.

Caules erecti, puberuli, striati, ramosi: folia petiolata, inferiora latè lanceolata dentata, superiora angustè lanceolata, integerrima v. basi pinnatifida dentata, suprà glabriuscula scabra, subtùs pilis adpressis densè pubescentia; (sic in exemplaribus meis, at verosimiliter ut in alteris speciebus hujus generis formâ maxime variabili). Capitulum majusculum, terminale, solitarium. Involucri squamæ nigrescentes, basi ovatæ, longè subulatim acuminatæ, inferiores laxæ nec reflexæ glaberrimæ, intimæ oblongæ scariosæ apice tenuiter puberulæ. Flores albo-flavescentes; filamenta papillosa; antheræ apice appendice acutâ, basi 2-caudatæ, caudis inæqualiter laceris. Stylus nodo puberulo,

ramis a nodo divergentibus glabriusculis; bulbo basali ovoideo. Achenium glabrum, apice annulo brevi persistente coronatum. Pappus pluriserialis, setis ciliato-scabris inæqualibus basi breviter in annulum concretis, caducus.

Differt a *T. elongatâ* et *T. furcatâ* squamis exterioribus basi dilatatis. In omnibus meis exemplaribus *T. elongatæ* involucri squamæ plùs minùs arachnoideæ sunt nec glabræ, et styli rami divaricati, quamquam sæpè in juniore facie connectuntur; ideo character Candollianum emendatum est. *T. furcata* squamis apice pilosis distinctissima est, squamis etiam inferioribus reflexis cognoscenda. Genus meâ sententiâ potiùs ad *Serratuleas* referendum est.

Subtrib. SERRATULEÆ.

Gen. STICTOPHYLLUM.

CHAR. GEN. *Capitulum* multiflorum, homogamum. *Involucrum* ovoideum, squamis regulariter imbricatis, ex ovatis oblongis, exappendiculatis. *Receptaculi* fimbrillæ in squamas integras furcatasve setosas productæ. *Corolla* 5-fida, subregularis; fauce sensim ampliatâ 5-nervi, basi incrassatâ bulbosâ. *Stam.* filamenta papillosa; antheræ appendice acutâ; caudis 2 brevibus sublaceris. *Pollen* globosum echinulatum. *Stylus* basi bulbosus, coronâ epigynâ denticulatâ, ad nodum penicillatus, ramis brevibus extùs pùberulis, lineis stigmatosis filiformibus marginantibus. *Achenium* areolâ terminali centrali, basilari laterali, incurvum, angulatum, costatum, glabrum, læve, annulo integro brevi superatum; *pappus* pluriserialis; pilis inæqualibus, plumosis, basi liberis, persistentibus.—Folia *punctata* (στικτὸς, punctatus, φυλλόν, folium).

119. STICTOPHYLLUM GLABRUM.

Hab. In graminosis siccis sub-Sivalicis, Prov. Saharanpur prope pagum Mozaffarabad. Martio.

Caules breves, scaposi, basi foliosi, suprà foliolo 1–2, bracteati, 1–2-cephali, angulares, glabri (4–6 pollicares). Folia lineari-oblonga, sessilia, integra, apice obtusiuscula mucronata, margine breviter revoluto, glabra, punctata; nervo medio crasso, lateralibus duobus prope basin ortis subparallelis, nervulis cum eis et rursùm cum medio anastomosantibus. Involucri squamæ scabriusculæ, glabræ; exteriores breves, ovatæ, tum lanceolatæ, herbaceæ, apice acutiusculæ mucronulo revoluto; intimæ oblongæ, scariosæ, acumine longo hispidulo. Antherarum appendicibus valvis duplò brevioribus; caudis articulum filamenti vix æquantibus, obtusis, glabris. Pappus sordidus.

Genus pappo plumoso persistente, pilis liberis et squamis involucri exappendiculatis distinctum, hinc facie florum *Serratulæ*, illinc foliorum punctatorum *Tricholepidis sectioni Ochanopappo*, affinis videtur.

CICHORACEÆ.

120. LACTUCA (*Scariola cyanea*) ARVENSIS; glaberrima, erecta, foliis pinnatifidis; segmentis obtusis: caulinis sagittato-amplexicaulibus, corymbo laxo, squamis biserialibus, acheniis marginatis utrinque 3-nervibus rugosis.

Hab. Himala, in arvis ruderatisque frequens, ad alt. ped. 3000–7000. Simla, &c.

Annua, erecta, glaberrima, parcè ramosa. Folia radicalia alternatim interruptè pinnatifida, segmentis repandis rotundatis obtusis; caulina subintegerrima, basi sagittata, amplexicaulia, auriculâ obtusiusculâ. Corymbus terminalis, laxus, pedicellis longis unibracteatis. Involucri squamæ biseriales, marginatæ, post anthesin reflexæ; exteriores interioribus oblongis obtusis triplò breviores, ovatæ, acutiusculæ. Corollæ 3-dentatæ, cyaneæ. Achenium compressum, ellipticum, latè marginatum, utrinque 3-nerve, rugosum, nigrum, rostro difformi pallido duplò breviùs. Pappus simplex, e cupulâ rostri stellatim patens, niveus. Receptaculum scrobiculatum.

121. YOUNGIA GLAUCA; glaberrima, caulibus subdecumbentibus foliosis, foliis petiolatis radicalibus obovatis integerrimis dentatis caulinis lanceolatis plùs minùs pinnatifidis, pedunculis monocephalis axillaribus terminalibusque, acheniis striatis apice scabris ceterùm glabris.

Hab. Himala, ad alt. ped. 10,000–11,000. Niti.

Perennis, glaberrima; caules numerosi, subdecumbentes v. foliosi. Folia radicalia petiolata, obovata, integerrima, sinuato-dentata; caulina petiolata, ovata v. lanceolata, plus minus pinnatifida v. sinuato-dentata vel integra, glauca. Pedunculi 1-cephali, axillares terminalesque. Involucri squamæ exteriores calycantes, breves, obtusæ; interiores 8 erectæ, obtusæ, quarum 3 exteriores angustiores lineares, 5 margine scarioso oblongæ. Flores circiter 8, lutei. Achenia compressa et trigona, utrinque attenuata, striata, glabra, apicem versus scabra. Pappus sessilis; setis tenuibus scabrellis niveis.

Ab aliis *Youngiis* inflorescentiâ diversa, sed characteribus floralibus congener.

122. MELANOSERIS SAXATILIS; suberecta, foliis caulinis pinnatipartitis; lobis obtusis terminali rhomboideo acutiusculo basilaribus amplexicaulibus, pedunculis 1–2-cephalis paniculam laxam corymbosam formantibus, pappo exteriori squamis brevibus inæqualibus interiorem calyculante, acheniis striatis rostro paulò longioribus.

Hab. Himala, ad alt. ped. 7000–8000, in rupibus madidis, supra Pandkesar. Sept., Oct.

Perennis, suberecta, 1–1½ pedalis, glabra. Folia caulina inferiora pinnatipartita; lobis lateralibus trapezoideis apice sinuatis integris, terminali angustè rhomboideo acutiusculo; basilaribus latò dilatatis rotundatis amplexicaulibus: floralia sensim minora, lanceolata, basi amplexicaulia. Ramuli floriferi axillares, pedunculos 1–2 monocephalos axillares et corymbum terminalem laxè pauciflorum gerentes, paniculam amplam foliosam formantes. Capitulum cylindricum, basi bracteolâ ovatâ cordatâ pilosâ stipatum, majusculum, multiflorum. Squamæ oblongæ, extùs pilis longis fuscis parcè villosæ, triseriales; infimæ 3 breves; secundi ordinis 5, interioribus duplò brevioribus; superiores 8, quarum duæ intimæ subscariosæ apice tantùm pilosæ. Corollæ cyaneæ (circiter 24), apice 5-dentatæ, glabræ. Achenia compressa, lanceolata, decem-striata, scabra, rostro (vix conformi, apice tantùm difformi,) achenio paulò breviore torto. Pappus ex cupulâ terminali ortus, duplex. Series exterior brevis (margo cupulæ elongatus) e squamulis piliformibus lævibus acutis inæqualibus; interiore pilis tenuibus rigidulis fragilibus niveis. Receptaculum alveolatum.

123. MELANOSERIS PANICULATA; erecta, basi glabra supernè pilosa, foliis longè petiolatis lyratis pilosiusculis scabris; lobo terminali acuminato, paniculâ racemosâ terminali efoliatâ polycephalâ, capitulis pedunculatis solitariis nutantibus, pappo exteriore minutissimo squamoso-ciliato, acheniis latè marginatis utrinque 5-nerviis.

Hab. Himala, in sylvis, alt. ped. 7000–9000. Garhwál.

Perennis, erecta, 3–5-pedalis, basi glabra, supernè pilosa. Caulis striatus, strictus, foliosus. Folia omnia longè petiolata, lyrata, pinnatisecta, parcè pilosa, scabriuscula, lobis lateralibus ovatis oblongisve, rotundato-obtusis acutiusculisve, integris, terminali ovato, acuminato, basi cuneato v. subcordato, sinuata, mucronato-denticulata. Panicula terminalis, ultrapedalis, basi tantùm foliosa; bracteis linearibus subulatisve ciliato-scabris. Capitula pedicellata, nutantia, solitaria, cylindrica. Squamæ involucri exteriores breviores, plùs minùs pilis albis hirsutæ; interiores acutiusculæ, plerumque glabræ. Corollæ cyaneæ (circiter 16–20), apice 5-dentatæ, dentibus glandulosis. Achenia angustè obovata, compressa, latè marginata, illinc scabra, latere utrinque 5-nervia, sublævia, nigra; rostro subconformi torto, apice in cupulam dilatato. Pappus duplex; exterior e margine cupulæ squamis brevissimis minutis, æqualibus; interior setis rigidulis albis crebrè serrato-scabris. Succus lacteus.

Genus *Melanoseris* a clar. Decaisne (in Jacquemont, Voyage aux Indes) constitutum, intermedium inter *Mulgedium* et *Lactucam*; ab utroque satis distinctum, et charactere a cupulæ margine pappi seriem exteriorem mentiente addito facilè recognoscendum. Huc etiam *Mulgedium cyaneum* (DeC. 8) et *M. rapunculoide* (DeC. 7) revocanda et *Lac-*

tuca hastata (Wall. et DeC. 45). Pappus exterior *M. cyaneæ* et *M. hastatæ* similis *M. paniculatæ* est minutissimus; in *M. rapunculoide* longior æqualis, at brevior quam in *M. saxatili.*

Mulgedium macrorhizum, cui maximè affinis *M. saxatilis* (suprà), ni fallor huc referendum est pappo exteriore distincto; at propter fructus immaturos quoad longitudinem rostri incertus sum.

Mulgedium sagittatum, Royle Illust. tab. 61, et DeC. *l. c.* eadem est ac *Lactuca longifolia* (DeC., no. 18) errore quodam *Lactucis xanthinis* relata; vera est *Lactuca* nec *Melanoseris*, rostro omninò difformi virescenti, et cupulâ solidâ nec ciliatâ.

Ord. Campanulaceæ.

124. Cephalostigma hirsuta; ramosa, omninò pilis carnosis hirsuta, paniculata, calycis laciniis linearibus corollâ vix brevioribus, stylo corollam paulò superante, capsulâ 3-valvi.

Hab. Himala, ad alt. ped. 4000–6000. Banásar.

Annua, 1–6 uncialis, ramosa, omninò pilis patentibus carnosis hirsuta. Folia obovato-lanceolata, inferiora in petiolum attenuata, superiora sessilia, sinuato-subcrenata, subcarnosa. Pedunculi foliis longiores, axillares terminalesque, paniculam laxam formantes. Calyx extùs densè carnoso-pilosus, laciniis basi distantibus linearibus acutis. Corollæ rotatæ tubo brevissimo; laciniæ vix calyce longiores, lineares, pallidè cærulescentes, pilosiusculæ. Stamina filiformia, antheris liberis, laciniis corollinis breviora. Stylus corollâ sublongior; stigmate capitato, subtrilobo. Capsula apice dehiscens, trivalvis. Semina acutè triquetra, glabra.

125. Cyananthus microphylla; caulibus prostratis puberulis, foliis oblongis lanceolatisque suprà glabris subtùs adpressè pubescentibus, corollâ fauce villosâ calyce duplo longiore.

Hab. Himala, ad alt. ped. 10,000–12,000. Mána. Sept., Oct.

Rami numerosi, filiformes, teretes, striati, substrigosè puberuli, diffusè prostrati v. penduli. Folia brevissimè petiolata v. subsessilia, oblonga v. lanceolata, suprà glabra, subtùs adpressè pubescentia, ad apicem rami approximata, acutiuscula. Flos terminalis, cæruleus. Calyx campanulatus, 5-fidus, laciniis acutiusculis, pilis nigrescentibus densè hirsutus, corollâ duplò brevior. Corolla tubulosa, limbo patente 5-partito apice glabro, intùs ad faucem villis longis albis vestita. Stamina 5 filiformia, basi dilatata, in coronulâ hypogynâ inserta. Antheræ cordato-ovatæ, acutæ, connatæ. Ovarium liberum, 5-loculare, polyspermum, sensim in stylum attenuatum; stigmate 5-partito. Ovula oblonga, glabra, prope basin placentæ centralis inserta.

126. CYANANTHUS BARBATA; densè cinereo-pubescens, foliis ovatis integris serrulatisve, calycis laciniis linearibus acutis tubum corollæ ferè æquantibus, corollæ limbi segmentis 5 intùs basi extùs apice pilis paucis longis barbatis.

Hab. Himala, ad alt. ped. 9000–10,000. Túngnáth.

Collum sublignosum; rami numerosi, filiformes, penduli vel prostrati, substriati, pilosi, uniflori. Folia brevè petiolata, ovata v. ovato-lanceolata, integra vel apice serrulata, utrinque, subtùs densissimè, adpressè pilosa; suprema confertiora, subinvolucrantia. Flos terminalis, solitarius, cæruleus. Calyx inflatus, ovoideo-campanulatus, ad medium 5-fidus, laciniis linearibus acutis corollæ tubum subæquantibus, densè pilis olivaceis basi nigrescentibus vestitus. Corolla tubulosa, limbo patente 5-fido, segmentis apice pilis longiusculis barbatis, intùs pilis albis ciliata, fauce tamen aperta. Antheræ connatæ. Capsula 5-locularis, apice vacua, loculicidè dehiscens; valvis dorso carinatis, acutis, cornuiformibus. Semina oblonga, obtusa, compressa; testâ tenui glabrâ, minutissimè sub lente striolatâ, apiculatâ; embryo parvus, orthotropus, in medio albuminis carnosi, eo dimidiò brevior.

Differt a *C. integrifoliâ* foliis minoribus pilosioribus, calyce longiore, corollæ laciniis apice barbatis, nec glabris ut in *C. integrifoliâ*. In *C. lobatâ* pilis brevibus nigris barbellatæ sunt*.

Ord. JASMINEÆ.

127. JASMINUM ROXBURGHIANUM (*Wall. Cat.* no. 2870); scandens, ramis teretibus pubescentibus, foliis petiolatis latè ovatis utrinque densè tomentosis obtusis acuminatisve, petiolis articulatis, pedunculis 3-floris v. paniculis dichotomis terminalibus, calyce densè tomentoso: laciniis subulatis tubum æquantibus corollæ tubo quadruplò brevioribus, bracteis articulatis subulatis subclavellatis, corollæ laciniis plerumque 7 lanceolatis acutis.

Hab. In dumetis prope Sadhaura inter ditiones Seikhenses, Ind. Dor. Occ.

A *J. elongato* distinctissimum.

Ord. PRIMULACEÆ.

128. LYSIMACHIA GLANDULOSA; caulibus debilibus angulosis, foliis brevè petiolatis alternis ovatis rubro-glandulosis, pedunculis folio brevioribus axil-

* The insertion of the stamens and the structure of the ovary and capsule in this genus are at complete variance with those of *Polemoniaceæ*, and place it among *Campanulaceæ* near *Wahlenbergia*, with which it also agrees in habit, milky juice, and almost every other character, differing only in the free calyx, in the same way that *Lobelia xalapensis* differs from *L. Cliffortiana*.—G. BENTHAM.

laribus, calycis laciniis lanceolatis nervo medio hirsutis acutis corollam glandulosam æquantibus, filamentis liberis.

Hab. Himala, ad alt. ped. 4000–5000, in rupibus aridis. Tikri in Sirmur.

Debilis, parcè pubescens; caulibus angulosis. Folia brevè petiolata, alterna, ovata, suprà pilis paucis glandulisque rubris aspersa, subtùs secus nervos pubescentia, ceterùm glabra, crebrè glandulosa. Flores axillares, pedunculo folio breviore glanduloso. Calycis laciniæ lanceolatæ, nervo medio crassiusculo ciliato, hirsutæ, acutæ, corollam æquantes. Corolla lutea, glandulis rubris utrinque aspersa et ciliolata; laciniis ellipticis, obtusis. Stamina in fauce corollæ inserta, libera, laciniis 3plo breviora, antheris glandulosis. Capsula glabra, breviter striata, calyce brevior.

Affinis *L. alternifoliæ* (DeC. 34); differt calycis laciniis latioribus corollæ angustioribus, pedunculis staminibusque brevioribus, magis hirsuta et glandulosa.

129. LYSIMACHIA FERRUGINEA; repens, ferrugineo-hirsuta, foliis oppositis brevè petiolatis ovatis, pedunculis axillaribus petiolo longioribus, calycis laciniis lineari-lanceolatis acuminatis corollâ brevioribus, corollæ laciniis rotundatis, filamentis ad medium ferè monadelphis.

Hab. Himala, in rupibus umbrosis prope pagum Nohra in monte Chúr, alt. ped. 7000–8000. Junio.

Repens, ferrugineo-pubescens. Caules teretiusculi. Folia opposita, brevè petiolata, ovata, basi vel cuneata vel subcordata, in petiolum attenuata, utrinque pilis articulatis ferrugineis hirsuta. Pedunculi axillares, petiolo longiores (in exemplaribus meis Himalaicis folio breviores, in Peninsularibus longiores). Calycis laciniæ lineari-lanceolatæ, acuminatæ, corollâ breviores, hirsutæ. Corollæ rotatæ laciniæ rotundatæ, obtusæ, glandulis nigris adspersæ. Filamenta ad medium ferè monadelpha, sterilia nulla, stylo breviora.

Differt a *L. debili* (DeC. 36) pubescentiâ crebriore, corollæ laciniis rotundatis nec ovatis acutiusculis, pedunculis longioribus petiolisque brevioribus (in *L. debili* pedunculi petiolos vix æquant), filamentis brevioribus longiùs monadelphis.

Ord. GENTIANEÆ.

130. CICENDIA MICROPHYLLA; annua, caule erecto tenui parcè ramoso 4-angulari, foliis minimis subulatis paucis, floribus terminalibus solitariis, calycis 5-partiti laciniis linearibus acutis scarioso-marginatis tubum corollæ æquantibus, corollæ hypocraterimorphæ laciniis acutis, staminibus

ad faucem insertis; antheris immutatis omnibus fertilibus, ovario ovato, stylo longo, stigmate capitato.

Hab. Himala, in graminosis, alt. ped. 5000–7000. Mandal, Garhwal.

Herba parvula, 1–3 pollicaris; foliis 1–2 lineas longis; flore flavo.

131. GENTIANA (*Chondrophyllum*) CEPHALODES; caule filiformi, apice foliis paucis capitulum 3–4-florum involucrantibus, capsulâ breviter stipitatâ apice rotundatâ ciliolatâ emarginatâ, stylo bifido utrinque reflexo.

Hab. Himala, in glareosis, alt. ped. 5000. Banásar.

Annua, 1–2 pollicaris. Caulis erectus, teres, basi nudus, apice capitulum 4–5-florum foliis involucratum gerens. Folia 4–6 sessilia, latè obovata, obtusa, mucronata, interiora minora, decussatim opposita, arctè involucrantia. Flores in capitulo sessiles. Calyx membranaceus, 5-dentatus; laciniis nervo medio subherbaceo acutis, mucronatis, corollæ plicas æquantibus. Corollæ 5-fidæ intùs nudæ laciniæ angustæ, acutæ; plicæ integræ vel 2–3-dentatæ, acutæ. Stamina ad medium tubi inserta; filamentis filiformibus; antheris parvis, versatilibus, luteis. Ovarium brevè stipitatum, cuneato-obovatum, apice marginatum, ciliolatum, emarginatum; post anthesin stylis brevibus, filiformibus, liberis, utrinque revolutis, stigmatibus apicalibus introrsis, extùs puberulis. Capsula bivalvis; valvis ad medium patentibus, reflexis, apice rotundatis, emarginatis, ciliolatis. Semina ovoidea; testâ nervis crassiusculis reticulatâ.

Species distinctissima; affinis videtur *G. marginatæ*.

132. GENTIANA (*Pneumonanthe* *) STIPITATA; caulibus prostratis, foliis lanceolatis ovatis obovatisve margine ciliolatis mucronatis, calycis laciniis foliaceis spathulatis carinatis mucronatis, corollæ laciniis mucronatis plicis integris dentatisve, antheris liberis, capsulâ longè stipitatâ.

Hab. Himala, ad alt. ped. 9000–11,000. Mána.

Collum crassum, reliquiis foliorum obsitum. Caules prostrati, radiantes, rosulati, glandulis albis pruinosi, foliosi. Folia radicalia plerumque lineari-lanceolata, caulina opposita, ovata vel obovata, terminalia majora involucrantia, omnia mucronata, margine subcartilagineo minutè ciliolata; petiolis brevibus, membranaceis, amplexicaulibus. Flores terminales, solitarii, magni, cærulei, extùs olivacei. Calycis campanulati laciniæ magnæ, foliaceæ, spathulatæ, carinatæ, mucronatæ, corollæ tubo duplò breviores. Corolla magna campanulata; tubo sub 5-angulari, intùs nudo; limbo subpatente 5-fido, laciniis acutiusculis, mucronatis; plicis obtusè 3-dentatis vel acutiusculè integris. Stamina prope basin tubi inserta, filamentis basi dilatatis, antheris flavis liberis. Stylus longiusculus,

antheras superans, bifidus; ovario subtereti, fusiformi, utrinque attenuato, longè stipitato, stipite in anthesi conduplicato demùm elongato. Semina ovalia, rugoso-reticulata.

Variat foliis latioribus, corollæ laciniis vix mucronatis. Túngnáth.

Affinis *G. ornatæ* et *G. Cashmerianæ*; formâ foliorum et calycis laciniarum majorum distincta.

133. GENTIANA NUBIGENA; subacaulis, foliis oblongo-linearibus laciniisque calycinis obtusis margine lævibus, corollâ tubuloso-campanulatâ, antheris liberis.

Hab. Himala, ad alt. ped. 16,000–17,000, prope portum Mána.

Collum nudiusculum; folia rosulata, oblongo-linearia, angusta, obtusa, margine subcartilagineo, lævia. Caulis brevis, 1-florus; foliis 4 amplexicaulibus, decussatis, conformibus; plerumque foliis radicalibus brevior. Calyx membranaceo-tubulosus; limbo 5-fido, laciniis oblongis, obtusis, distantibus, tubo duplò brevioribus. Corolla tubuloso-campanulata, (limbo continuo) calyce duplo longior; lobis 5 ovatis, obtusis; plicis triangularibus, acutiusculis, integris dentatisve. Filamenta basi dilatata; antheræ liberæ, luteæ, stylo emarginato superatæ. Fructum non vidi.

Valdè affinis *G. Frœlichii* (DeC. 143), at distincta antheris liberis, foliis caulinis longioribus conformibus obtusis, calycisque laciniis obtusis, nec ut in *G. Frœlichii* plerumque acutiusculis.

134. PLEUROGYNE CARINATA; foliis subsessilibus ovatis obtusis, calycis laciniis acutis corollâ brevioribus, corollæ laciniis basi bisquamatis squamis laciniatis, capsulâ acutâ subcompressâ utrinque carinatâ.

Hab. Himala, ad alt. ped. 10,000–11,000. Badhrináth.

Annua, multicaulis: caules acutè quadrangulares. Folia subsessilia, omnia opposita, ovata, obtusa. Pedicelli longi, filiformes, axillares terminalesque. Calyx 5-partitus; laciniis lanceolatis, acutis, corollâ brevioribus. Corolla rotata, ad basin ferè 5-partita; laciniis lanceolatis, patulis, acutis, basi squamis 2 oblongis laceris instructis. Stamina 5; filamentis basi æqualibus, subpatulis; antheris versatilibus, cæruleis. Stylus nullus. Stigmata in dorso ovarii decurrentia. Capsula acuta, subcompressa, utrinque carinata, sessilis. Semina subglobosa, nitida, sub lente tenuissimè rugosula.

Habitus omninò *P. carinthiacæ*, at satis diversa.

135. OPHELIA PRATENSIS; caule tetragono, foliis sessilibus linearibus, calycis laciniis acutis corollâ 4-merâ subduplò brevioribus, corollâ rotatâ: laci-

niis ovatis obtusiusculis; foveis solitariis apice fimbriatis squamulâ lævi vix ciliatâ tectis.

Hab. In pratis sub-Sivalicis, Prov. Sahâranpur.

Annua, erecta, glabra (1–4 pedalis); caulis tetragonus, ramosus; folia omnia opposita, sessilia, linearia, 1–3-nervia ($1\frac{1}{2}$–3 pollices longa, 2–4 lineas lata). Pedunculi axillares, 1–3-flori, paniculam amplam formantes. Flores 4-meri, ochroleuci. Calycis laciniæ acutæ, corollâ subduplò breviores. Corolla rotata; laciniis latè ovatis, obtusiusculis; foveis solitariis, orbiculatis, apice tenuiter fimbriatis, squamulâ lævi apice vix ciliato-lacerâ tectis. Stamina 4, filamentis basi breviter monadelphis, conniventia, antheris luteis, ovaria æquantia. Stylus nullus. Stigmata 2 distincta obtusa. Capsula glabra, compressa, apice attenuata, obtusiuscula. Semina orbiculata, compressa, rugosa, placentis subspongiosis juxta suturas immersa.

136. SWERTIA TETRAGONA; erecta, ramosa, caule tetragono, foliis omnibus oppositis angustè lanceolatis acutis, calycis laciniis lineari-lanceolatis corollam subæquantibus, corollâ subcampanulatâ 5-merâ; laciniis acutis; foveis binis oblongis utrinque fimbriatis, stigmate subbilobo subreniformi.

Hab. Himala, ad alt. ped. 6000–8000. Simla, Tungru, graminosis.

Annua, erecta, ramosa ($\frac{1}{2}$–2 pedalis). Caulis alato-tetragonus. Folia omnia opposita, angustè lanceolata, brevissimè petiolata v. sessilia, acuta, 1–3-nervia. Pedunculi ramulique floriferi axillares. Calycis laciniæ 5, lineari-lanceolatæ, corollam subæquantes. Corolla subcampanulata, vix rotata; laciniis lanceolatis acutis; foveis geminis oblongis utrinque fimbriatis. Filamenta ad fissuram corollæ inserta, basi vix latiora, divergentia; antheræ liberæ, cærulescentes. Ovarium filamentis brevius; stigmate obtuso, subreniformi, subbilobo. Capsula dorso ad apicem breviter carinato-crista. Semina minima, subsphærica, rugosiuscula. Placentæ membranaceæ utrinque juxta suturas positæ.

Habitus *Opheliæ*, structura *Swertiæ*.

Ord. CONVOLVULACEÆ.

Trib. CUSCUTEÆ.

137. CUSCUTA CAPILLARIS; capillacea, glomerulis sessilibus bracteâ latâ cauli adpressâ suffultis, floribus sessilibus, calyce ad medium bifido; segmentis obtusis corollâ triente brevioribus dorso incrassatis, corollâ campanulatâ segmentis rectis acutiusculis; squamis nectariferis minimis laciniatis, filamentis infra faucem insertis planis basi dilatatis; antheris reniformibus,

ad medium laciniarum corollæ porrectis, stylis 2 longiusculis sensim in stigmata subclavata incrassatis, ovario depresso obtuso, capsulâ ad apicem corollâ marcidâ tectâ 4-spermâ, seminibus compresso-orbiculatis.

Hab. Himala, ad alt. ped. 9000. Malári, in Garhwál Superiore, in herbis alpinis variis.

Statura *C. minoris.*

138. CUSCUTA ANGUINA*; caulibus filiformibus, racemis solitariis geminisve, pedunculo exsquâmato, flore singulo pedicellato (rariùs subsessili) bracteolato, calycis ad basin 5-partiti laciniis obtusis vel acutiusculis lacinias corollæ reflexas attingentibus, squamis nectariferis 5 fimbriatis, antheris ad faucem corollæ omninò sessilibus subtrigonis acutis flavis semi-exsertis, stigmatibus in ovarii acutiusculi apice sessilibus trigonis acutis.

Hab. Himala, ad alt. ped. 5000–7000, in herbis variis. Pipalkoli, Garhwál.

Corolla vix $1\frac{1}{2}$–2 lineas longa; calyx $\frac{1}{2}$–$\frac{3}{4}$ lin. longus.

Differt a *C. reflexâ* pedunculis 2-squamatis stylisque sessilibus, ab eâ et *C. macranthâ* antheris omninò sessilibus, corollæ laciniis magis revolutis, staturâ minore et racemis gracilioribus.

Ord. NYCTAGINEÆ.

139. OXYBAPHUS HIMALAICUS; viscosus, foliis petiolatis ovatis basi rotundatis cordatisve, floribus in involucro solitariis tetrandris.

Hab. Himala, ad alt. ped. 7000–8000, in valle flum. Dhauli.

Annuus, omninò pilis viscosis densè hirsutus. Caulis teres, ascendens, articulatim dichotomus. Folia opposita, petiolata, ovata, basi rotundata v. cordata, apice obtusiuscula, suprà parcè subtùs magis viscoso-pilosa, ciliata. Pedunculi axillares, longi, solitarii, paniculam laxam dichotomam formantes, in fructu nutantes. Involucrum campanulatum, membranaceum, 5-dentatum, extùs densè viscido-pilosum, uniflorum. Calyx corolliformis, majusculus, roseus, supra ovarium contractus tubulosus, limbo plicato expanso. Stamina 4 inclusa, antheris cruciatis. Fructus monospermus, cum involucro caducus. Semen albumine farinaceo copioso, turbinatum.

Valde affinis *O. Cervantesii*; species Himalaica notabilis in genere hucusque omninò Meridionali-Americano.

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* This name is given in allusion to a superstition of the mountaineers, that crows are in the habit of plucking off sprigs of this and *C. macrantha*, and dropping them into running water, when the sprig becomes a serpent and fit food for the crow. They likewise imagine that the possession of the *root* of the *Cuscuta* confers the power of invisibility, and passing through locks, bars and doors unhindered.

Ord. THYMELEÆ.

140. STELLERA CONCINNA; perennis, caulibus herbaceis virgatis, foliis latè lanceolatis acutis, capitulo terminali multifloro.

Hab. Himala, ad alt. ped. 10,000–11,000. Pharkia prope Niti.

Glabra; collum subterraneum, perenne, sublignosum. Caules numerosi, virgati, erecti, teretes, foliosi, herbacei. Folia subsessilia, latè lanceolata, acuta, inordinatè disposita. Capitulum terminale, multiflorum, subglobosum. Calyx hypocraterimorphus, limbo 5–6-fido. Stamina 10–12, quorum 5 (v. 6) ad medium tubi, 5 (v. 6) prope faucem inserta; filamenta filiformia, antheris oblongis introrsis breviora; coronulâ hypogynâ brevissimâ denticulatâ. Ovarium hirsutum, uni-ovulatum, ovulo pendulo. Stylus ovario brevior, filiformis; stigma capitatum. Fructum maturum non vidi.

Flores albidi, tubo rubro, odoratissimi. Inflorescentiâ *S. Chamæjasme*, foliis *S. altaicæ*.

Ord. SANTALACEÆ.

141. THESIUM HIMALENSE (*Royle Illustr.*); foliis linearibus 1-nervibus, flore 3-bracteato, calycis laciniis barbatis, staminibus nudis, fructu laciniis ad basin involutis coronato.

Hab. Himala, in apricis glareosis. Chepál, Pauri in Garhwál.

Glauca, glabra; caules ramulosi, procumbentes. Folia linearia, crassiuscula, 1-nervia. Racemi terminales. Pedicelli longiusculi, 1-flori. Flores 3-bracteati; bracteis 2 æqualibus, unâ elongatâ ceteris duplò triplòve longiore. Calyx ovario adnatus, limbo ultra medium 5-partito; laciniis acutiusculis, intùs supra staminum insertionem barbellatis. Filamenta glabra, antherâ defloratâ duplò longiora, in calycis laciniis subcucullatis nidulantia. Stylus longiusculus; stigmate capitato. Ovula 2, ad apicem placentæ liberæ utrinque pendula. Fructus calyce indurato, laciniis ad basin involutis, coronatus. Semen solitarium, pendulum.

Facie omninò *T. intermedio* similis; differt ab omnibus Europæis laciniis calycinis barbatis staminibusque glabris; unde intermedium intra sectiones clar. Endlicheri *Euthesium* et *Frisca*.

Ord. ASPHODELEÆ.

142. UROPETALUM HYSUDRICUM; floribus erectis, perianthii subcylindracei laciniis exterioribus ad medium reflexis, interioribus erectis apice tantùm patentibus, bracteis pedicellis brevioribus, foliis linearibus canaliculatis scapo brevioribus.

Hab. In Ind. Or. Prov. Bor. Occ. prope Lodihana, et in Pentapotamiâ. *Hysudricum* a flumine Hysudro (Sutlej) dictum.

Bulba tunicata. Folia linearia, canaliculata, glabra, (6–9 pollicaria,) scapo dimidio ferè breviora. Scapus multiflorus, erectus (1–1½ pedalis); bracteæ scariosæ, ovatæ, apice acuminatæ, pedicellis erectis breviores. Flores erecti. Perianthium subcylindraceum, 6-fidum; laciniæ 3 exteriores longiores, magis fissæ, ad medium reflexæ; interiores erectæ, apice tantum patentes; albidum, viridi-costatum. Filamenta 6, laciniis opposita, ad medium eorum inserta. Antheræ sagittatæ, liberæ, virescentes. Stylus ovarium subæquans, crassus; stigmate vix clavato, trisulcato. Ovarium triloculare, loculis polyspermis; ovulis (8–9) compressis, dolabriformibus. Capsula basi vix angustior, triloba, perianthii marcidi segmentis interioribus apice coalitis tecta. Semina compressa, suborbiculata, marginata, nigra; albumine carnoso; embryone axili, recto.

Valde affinis *U. serotino*; differt autem pedicellis bracteis longioribus, et perianthio magis fisso; capsulâ subæquali.

Ord. Commelyneæ.

143. Commelyna (*sect.* 2. β. *Kunth*, vol. iv. p. 52) maculata; hirsuta, caulibus procumbentibus, foliis ovato-lanceolatis utrinque hirsutis acutis in vaginis hirsutis fauce barbatis breviter petiolatis, involucro turbinato subobtuso 2–3-floro, capsulâ chartaceâ sublævi maculatâ.

Hab. Himala, ad alt. ped. 5000–6000. Syri.

Caules geniculati, radicantes, procumbentes, ramosi, subangulares, supernè hirsuti, infernè uno latere tantum pilosi, plerumque colorati. Folia ovata, lanceolata, acuta, 11–13-nervia, utrinque hirsuta, tenuia, petiolo brevissimo in vaginâ subsessilia; superiora quandoque difformia vaginâ explanatâ, sub involucro bracteantia, maculata. Vagina cylindracea, hirsuta, apice barbata. Involucra pedunculata vel sessilia, turbinato-cucullata, subtriangularia, utrinque obtusiuscula, hirsuta, nervosa, maculata, pedicellis duobus uno sterili altero 2–3-floro; pedunculi intra vaginas squamis membranaceis maculatis suffulti. Pedicelli glabri, fructiferi nidulantes. Flos pallidè cæruleus; sepala interiora 2 unguiculata, cærulea, tertium sessile, pallidius. Stamina 2 longiora antheris minoribus luteis, tertium brevius antherâ majore flavâ. Parantheræ æquales, subcruciatæ. Stylus declinatus. Capsula sublævis, straminea, maculata, apiculata, 3-locularis, loculicidè dehiscens, loculis 1-spermis; semen subteres, hilo longo lineari, papillâ oppositâ glabrâ, ceterùm rugosum. Embryo sub papillâ in testâ excavatâ nidulans, trochleatus; albumine magno, carnoso.

144. Commelyna ~~sicuata~~ glauca; foliis lineari-lanceolatis acuminatis puberulis, va-

ginis ciliatis, involucris turbinatis apice acutis, pedicellis solitariis 2–3-floris, capsulâ striatâ.

Hab. Himala, ad alt. ped. 3000–4000, Lakhwari, in valle Jumnæ.

Caules ramosi, radicantes, procumbentes, vix puberuli, striati, teretiusculi. Folia linearilanceolata, acuminata, basi attenuata, 7–9-nervia, suprà scabriuscula, subtùs molliter magisque puberula. Vagina nervosa, maculata, puberula, fauce pilis longis albis ciliata. Involucra axillaria v. terminalia, squamis hyalinis maculatis foliisque variè difformibus depauperatis suffulta, basi lobis coalitis turbinata, apice acutè apiculata, nervosa, maculata. Pedicellus solitarius, glaber, 2–3-florus, fructifer nidulans. Sepala 3 exteriora hyalina, ovata, maculata; interiora cærulea, 2 longè unguiculata lætiora, tertium sessile pallidius. Stamina 2 longiora antheris minoribus cæruleis, tertium brevius antherâ majore flavâ. Parantheræ cruciatæ, luteæ. Capsula subfusca, 3-locularis, striata, vix maculata, loculis 1-spermis.

Habeo etiam specimen prope Madras lectum speciei novæ huic affinis; sed fructus deest, undè describere nequeo. Ab hâc differt involucro longiore minùs turbinato marginato, foliisque angustioribus.

Gen. STREPTOLIRION.

CHAR. GEN. *Sepala* 6 hyalina, persistentia; exteriora latiora, interiora linearia. *Stamina* 6 perfecta; filamentis supra medium barbatis; antheris bilocularibus, loculis brachiatim divaricatis apice dehiscentibus. *Stylus* erectus, stigmate capitato puberulo. *Ovarium* 3-loculare; loculis 2-ovulatis, ovulis ad medium placentæ centralis affixis. *Capsula* chartacea, 3-locularis, trivalvis, loculicidè dehiscens. *Semina* in quoque loculo duo superposita, inferius pendulum, superius erectum, angulata, irregulariter rugoso-sulcata, hilo lineari, papillâ (embryostegâ) parvâ depressâ ei oppositâ. *Embryo* testâ sub papillâ productâ lateribus circumdatus, in albumine carneo subfarinaceo excavato nidulans.—Herba *volubilis, habitu et perianthio a* Tradescantiâ *distinctissima; charactere carpologico maximè affinis.*

145. STREPTOLIRION VOLUBILE; glaberrimum, foliis cordatis longe petiolatis (TAB. II.).

Hab. Himala, ad alt. ped. 6000–7000. In valle fluminis Dhawli, super herbas scandens. Tapuban et Lata. Floret Sept., Oct.

Caulis basi radicans, supernè ascendens, volubilis, glaber, teres, ramosus. Folia longè petiolata, ampla, cordato-ovata, acuminata, lævissima, glaberrima, tenuia. Petioli basi vaginantes (parte liberâ vaginâ duplò longiore) vaginâ apice truncatâ ciliatâ. Ramuli floriferi axillares terminalesque; folia involucralia gradatim difformia, brevissimè petio-

lata, evaginata vel sessilia, cordato-ovata, acuta vel subcomplicata, præsertim in fructu, vel patentia. Racemi 2–6-flori, flore superiore sæpe-sterili; bracteis hyalinis, lanceolatis. Sepala 6, albida, hyalina; tria exteriora elliptica, acutiuscula; 3 interiora angustè linearia, apice paulo dilatata. Stamina 6; filamenta supra medium pilis lúteis barbata. Antheræ 6, versatiles; loculis quadratis brachiatim divaricatis, demum apice fissis. Ovarium sensim in stylum attenuatum; stigmate capitato, puberulo. Capsula ovata, obtusè trigona, apiculata, glabra, lævis, trivalvis. Semina angulata (in quoque loculo duo) truncato-trigona, rugoso-sulcata.

EXPLANATION OF THE PLATE.

Tab. II.

Fig. 1. *Streptolirion volubile*, of the natural size.
Fig. 2. Flower, slightly magnified.
Fig. 3. A stamen.
Fig. 4. Pistillum.
Fig. 5. One of the valves of the capsule.
Fig. 6. Transverse section of capsule.
Figs. 7 & 8. Seeds in different points of view.
Fig. 9. Embryo.

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